IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Patent of:	)	
	)	Conf. No. 3112
Inventor(s): Charles L. Karr et al.	)	
	)	
Patent No.: 7,764,231	)	
	)	
Issued: July 27, 2010	)	
	)	
Atty. File No.: 1003-PUS	)	
	)	***Electronically Submitted***
Entitled: "WIRELESS LOCATION USING MULTIPLE MOBILE STATION LOCATION TECHNIQUES"	)	

Attn: Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT FOR PTO MISTAKE PURSUANT TO 37 C.F.R. § 1.322(a)

Dear Commissioner:

This Request for a Certificate of Correction of Patent for PTO Mistake is made pursuant to 37 C.F.R. § 1.322(a). Attached is Form PTO SB/44 containing the text of the correction which is requested herein. The error in Claim 185 of the patent is a typographical error and the correct wording may be found in Claim 484 of the After Allowance Amendment filed March 15, 2010, at page 60, line 15. The After Allowance Amendment was entered by the Examiner on April 2, 2010.

Respectfully submitted,

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,764,231

APPLICATION NO. : 09/194,367

ISSUE DATE : July 27, 2010

INVENTOR(S) : Charles L. Karr and Dennis J. Dupray

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Claim 185, column 211, line 22, replace "data for M_n" with --data for M_p--.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

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1560 Broadway, Suite 1200
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In Re the Application of:	)	
	)	Group Art Unit: 3662
Dupray et al.	)	
	)	Examiner: Dao L. Phan
Serial No.: 09/194,367	)	
	)	**After Allowance Amendment**
Filed: November 24, 1998	)	
	)	**ELECTRONICALLY FILED**
Atty. File No.: 1003-pus	)	
	)	
For: "WIRELESS LOCATION USING MULTIPLE MOBILE STATION LOCATION TECHNIQUES"	)	

Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Examiner:

This After Allowance Amendment is pursuant to the Notice of Allowance having a mailing date of Dec. 15, 2009. It is requested that the present After Allowance Amendment be entered, and the present application be reconsidered.

Applicants have cancelled herein dependent Claims 135, 325, 447, and 508. Applicants have previously paid for the same number independent claims (i.e., 21 independent claims as provided herein). Additionally, Applicants have previously paid for 15 more total claims than were pending prior to the present After Allowance Amendment. Since Applicants have provided herein 12 new dependent claims (i.e., Claim 511 through 522), and have cancelled 4 dependent claims, it is believed that Applicants have paid for 7 more total claims than is currently presented in the present application (i.e., 15 previously paid for claims – 12 new claims + 4 claims presently cancelled = 7 extra claims already paid for). Accordingly, Applicants believe that there is no fees due in connection with the filing of the present After Allowance Amendment. However, should the Applicant be incorrect, it is requested that the Office contact the undersigned Applicant immediately so that any fees due can be timely paid.

It has come to Applicants attention that PAIR does not show that the most recently submitted Information Disclosure Statement filed March 4, 2010 has not been considered. It is requested that the references from this Information Disclosure Statement be considered.

IN THE SPECIFICATION.

Please replace the first portion paragraph commencing on page 21, line 8 with the following paragraph. Note that the paragraph commencing on page 21, line 8 was previously amended in an amendment filed on Feb. 26, 2002, wherein the paragraph was broken into ***two*** paragraphs. The amendment requested herein is an amendment to the ***first*** of these two paragraphs.

Of course, other software architectures may also be [[to]] used in implementing the processing of the location center without departing from scope of the present invention. In particular, object-oriented architectures are also within the scope of the present invention. For example, the FOMs may be object methods on an MS location estimator object, wherein the estimator object receives substantially all target MS location signal data output by the signal filtering subsystem. Alternatively, software bus architectures are contemplated by the present invention, as one skilled in the art will understand, wherein the software architecture may be modular and facilitate parallel processing.

IN THE CLAIMS.

Claims 1 - 84 (cancelled)

85. **(**Currently Amended) A method for locating each terrestrial mobile station of a plurality of terrestrial mobile stations, **M**, wherein said method uses wireless signal measurements obtained from one or more transmissions between [[each]] said terrestrial mobile station **M** and one or more of a plurality of terrestrial communication stations, each terrestrial communication capable of at least one of: wirelessly detecting said terrestrial mobile station[[s]] **M**, and wirelessly being detected by said terrestrial mobile stations **M**, comprising:

for each of the mobile stations **M** perform the following steps by computational machinery:

receiving first and second location related information, respectively, from computational machinery performing ~~at least~~ first and second mobile station location estimators, wherein said location estimators provide different geographical indications of an unknown location of said mobile station **M** when said location estimators are supplied with corresponding input data obtained using wireless signal measurements obtained by transmissions between said mobile station **M** and the communication stations;

wherein the first location related information includes at least a first geographical indication for a location of the mobile station **M**;

wherein the second location related information includes at least a second geographical indication for the location of the mobile station **M**;

wherein for locating the mobile station **M** in at least one location, ~~at least one of~~ said ~~first and~~ second geographical indication[[s]] for **M** is obtained and is dependent upon a delay time of a signal from at least one non-terrestrial wireless transmitter, not supported on the Earth's surface, to **M** for determining a spatial range for **M**; and

outputting a resulting location estimate of the mobile station **M**, a determination of said resulting location estimate is dependent upon at least one of (a) and (b) following: (a) a first value obtained from said first location related information, and (b) a second value obtained from said second location related information.

Claims 86 - 87 (cancelled)

88. (Previously Presented) The method as claimed in Claim 85, further including a step of receiving a transmission, through a telecommunications network, of said first location estimator from a source site to an activation site for generating said first geographical indication;

wherein said step of receiving the transmission includes receiving an encoding of said first location estimator via the Internet.

Claim 89 (cancelled)

90. (Currently Amended) The method as claimed in Claim 85, further including, for at least one occurrence of locating one of the mobile stations for being **M**, a step of obtaining ~~retrieving~~ at least one of (i) and (ii) following, for a location estimator (**LE**) being one of at least one of the first and second location estimators,

(i) a selected set of geographical locations from an archive of geographical locations for a collection of one or more actual mobile station locations, said geographical locations of said archive generated by a location estimator $\mathbf{LE_1}$ wherein $\mathbf{LE_1}$ and **LE** are identical or substantially effectively equivalent when generating said geographical locations using first data obtained from wireless signal measurements of transmissions between: (1) one or more of a plurality of mobile stations, at said actual locations, and (2) said plurality of communication stations;

wherein at least one of said archived geographical locations is selected for being included in said selected set by determining that a predetermined condition is satisfied by a value related to a distance between: (a) said corresponding one of said first and second geographical indications for the location of the mobile station **M** received from **LE**, and (b) said at least one archived geographical location; and

(ii) data for more accurately identifying said corresponding one of said first and second geographical indications using ~~one or more mobile station actual locations corresponding to the geographical locations in~~ said selected set.

91. (Currently Amended) The method as claimed in Claim 85, further including, for at least one geographical indication, **GI**, of said first and second geographical indications, and for at least one occurrence of locating one of the mobile stations for being **M**, a step of obtaining a likelihood value that the at least one geographical indication **GI** includes said mobile station **M**, wherein said likelihood value is obtained using previous likely geographical indications for one or more mobile station locations generated by a location estimator **LE**, wherein **LE** and the location estimator that generated said at least one geographical indication **GI** are identical or substantially effectively equivalent when generating geographical indications of mobile stations.

Claims 92 - 93 (cancelled)

94. (Currently Amended) The method as claimed in Claim 85, for at least one occurrence of locating one of the mobile stations for being **M**, further including performing a first simulation for predicting a likelihood of said mobile station **M** being in said first geographical indication, wherein said simulation uses pairs of location representations, wherein for each pair (P), a first member of the pair P includes a geographical indication ($\mathbf{GR_P}$) obtained from a location estimator **LE**, wherein **LE** and said first location estimator are identical or substantially effectively equivalent for [[when]] generating said geographical indication $\mathbf{GR_P}$ for locating some mobile station, and a second member of the pair P includes a representation of an independently determined location of the some mobile station.

95. (Currently Amended) The method as claimed in Claim 85, wherein for at least some occurrences of locating one of the mobile stations for being **M**, including the occurrence of locating the some one mobile station, at least one of said first and second location estimators utilizes ~~one of the following:~~

~~(a)~~ a pattern recognition location technique for estimating a location of said mobile station **M** by recognizing a pattern of characteristics of said corresponding input data obtained from at least first and second transmission paths of multiple transmission paths of the transmissions between said mobile station **M** and at least one of the communication stations[[;]]]

~~(b) a mobile base station estimator for estimating a location of said mobile station **M** from location information received from a mobile base station detecting wireless transmissions of said mobile station **M**; and~~

~~(c) a coverage area location technique for estimating a location of said mobile station **M** by determining an area of a wireless coverage area for one of said communication stations~~.

96. (Currently Amended) The method as claimed in Claim 85, wherein for at least one occurrence of locating one of the mobile stations for being **M**, one of the first and second location estimators is activated and performs a pattern matching technique, wherein said pattern matching technique uses an association wherein said association is determined from a plurality of data pairs, each said data pair including: first information identifying a location of some mobile station, and second information from wireless signal measurements communicated between said some mobile station and one or more of the communication stations when said some mobile station is at the location.

97. (Currently Amended) A method for estimating, for each mobile station **M** of a plurality of mobile stations, one or more corresponding unknown terrestrial locations for **M** using wireless signal measurements obtained from transmissions between said mobile station **M** and a plurality of fixed location terrestrial communication stations, wherein each of said communications stations is substantially co-located with one or more of a transmitter and a receiver for wirelessly communicating with said mobile station **M**, comprising performing the following steps by computational machinery:

(1) initiating one or more requests for locating the mobile station **M**, wherein the requests are for activating one or more mobile station location evaluators provided by computational machinery for locating the mobile station **M**, at least one of said one or more location evaluators performs at least the first technique following, and at least one of said one or more location evaluators performs at least one of the second and third techniques following:

(i) a first technique for obtaining first geographic location information for said mobile station **M** using signal time delay values for signals received at the mobile station **M** from each of a plurality of satellites;

(ii) a second technique for recognizing a pattern in wireless signal characteristics, wherein said second technique includes the steps of (a) and (b) following:

(a) associating, for each location $\mathbf{L_a}$ of a plurality of geographical locations, (a1) and (a2) following:

(a1) a representation of the geographical location $\mathbf{L_a}$, and

(a2) for the geographical location $\mathbf{L_a}$, corresponding information indicative of one or more characteristics of wireless signals previously transmitted between some corresponding mobile station ([[$\mathbf{M_2}$]] $\underline{\mathbf{M_{L_a}}}$) and the communication stations, when the some corresponding mobile station [[$\mathbf{M_2}$]] $\underline{\mathbf{M_{L_a}}}$ transmitted from approximately the geographical location $\mathbf{L_a}$, the corresponding mobile station [[$\mathbf{M_2}$]] $\underline{\mathbf{M_{L_a}}}$ different from **M**; and

(b) determining ~~one or more likely~~ second geographic location information for **M** by identifying a similarity in a pattern between (b1) and (b2) following: (b1) one or more wireless signal characteristics determined from wireless signals communicated between the mobile station **M** and the communication stations, and (b2) the information of (a2) for a collection of one or more of the plurality of geographical locations; and

(iii) a third technique, wherein said third technique uses a statistical correlation for correlating (c) and (d) following:

(c) values that are a function of at least one of: a signal strength and a signal time delay of wireless signals between said mobile station **M** and the communication stations, and

(d) information indicative of: a plurality of collections of wireless signal measurements, wherein for each said collection, there is a known location **S** for obtaining ~~where~~ said collection ~~is obtained~~ from transmissions between said communication stations and some mobile station ([[$\mathbf{M_3}$]] $\underline{\mathbf{M_S}}$) at the location **S**, [[$\mathbf{M_3}$]] $\underline{\mathbf{M_S}}$ different from **M**;

wherein said statistical correlation is used for determining corresponding third geographic location information for the mobile station **M**;

(2) obtaining a first collection of one or more geographic estimations for said mobile station **M**, wherein the one or more geographic estimations are obtained from one or more of said first, second and third geographic location information of the one or more location evaluators;

wherein there is two way communication between the mobile station **M** and at least one of the communication stations for obtaining at least one of the geographic estimations;

(3) transmitting, to a predetermined destination via a communications network, resulting information for locating the mobile station **M**, wherein said resulting information is dependent on at least said first collection [[of]];

wherein for locating at least one location of the mobile station **M**, a preference is given to using a corresponding instance of one of the geographic estimations obtained form the first technique.

98. (Currently Amended) The method of Claim 97, further including:

obtaining a location estimate for the resulting information using an output of the second geographic location information from an activation of the second technique.

99. (Currently Amended) A method for locating mobile stations at one or more unknown terrestrial locations using wireless signal measurements obtained from transmissions between said mobile stations and a plurality of fixed location terrestrial communication stations, wherein each of said communications stations includes one or more of a transmitter and a receiver for wirelessly communicating with said mobile stations, comprising performing the following steps by computational machinery:

receiving, from a plurality of location requesting sources, a plurality of input requests for locations of the mobile stations;

for each of the input requests, providing to one or more mobile station location determining sources, one or more location requests for location information related to a location of one of said mobile stations;

wherein said one or more location determining sources perform the following techniques (i), and (ii)[[)]]:

(i) a first technique for determining geographical location information of each of at least some of said mobile stations, wherein for at least some geographical location of some mobile station **M1** of the at least some mobile stations, the first technique outputs ~~first data providing~~ the geographical location information for locating **M1** using a signal time delay value dependent upon a first input obtained from a signal, $\mathbf{S_1}$, received at the mobile station **M1** from a satellite, wherein said first technique uses said signal time delay value for determining the geographical location information, the signal time delay related to at least one distance between said mobile station **M1** and the satellite;

(ii) a second technique for determining second geographical location information for each of a plurality of said mobile stations, wherein for some mobile station **M2** of the plurality of mobile stations, the second technique outputs ~~second data providing~~ the second geographical information for locating **M2**, the second geographical information obtained by determining for a wireless signal communicated between the mobile station **M2** and at least one of the communication stations, one of:

(ii-1) a geographical extent corresponding to a detection of the wireless signal, and

(ii-2) a geographical extent obtained using a signal time delay measurement or signal strength measurement of the wireless signal;

wherein a two way communication between **M2** and the communication stations occurs for obtaining the wireless signal;

first obtaining, in response to a first of the location requests received from a first of the requesting sources, first output location data for locating a first of the mobile stations, wherein the first output location data

is obtained from said ~~first data~~ geographical location information output by an instance of said first technique performed by a corresponding one of the location determining sources, wherein the first mobile station corresponds to **M1**;

wherein the first output location data is obtained according to a first output criteria for the first request, said first output location data including a representation identifying a first geographical indication of the first mobile station;

second obtaining, in response to a second of the location requests received from a second of the requesting sources, second output location data for locating a second of the mobile stations, wherein the second output location data is obtained from said ~~second data~~ second geographical information output by an instance of the second technique performed by a corresponding one of the location determining sources, wherein the second mobile station corresponds to **M2**;

wherein the second output location data is obtained according to a second output criteria for the second request, said second output location data including a representation identifying a second geographical indication of the second mobile station;

wherein for at least one of said first and second output criteria there is an output criteria for another of the location requests that is different from said at least one output criteria;

wherein one or more of the first and second output criteria includes data for location accuracy, or data for location determining repetition;

first transmitting said first output location data to a corresponding destination via a communications network; and

second transmitting said second output location data to a corresponding destination via a communications network.

Claims 100 - 105 (cancelled)

106. (Currently Amended) A location system for locating mobile stations using wireless signal data obtained from transmissions between said mobile stations and a network of fixed location communication stations, wherein said communication stations are cooperatively linked for use in locating said mobile stations, comprising computational equipment for mobile station location, the equipment including:

a[[n]] data storage archive for storing a plurality of data collections, wherein for each of a plurality geographical locations, there is one of said data collections having (a1) and (a2) following:

(a1) a representation of the geographical location, and

(a2) a set of said wireless signal data obtained using transmissions between one of said mobile stations and the network, wherein the one mobile station transmits from approximately the geographical location of (a1);

~~an interface~~ a computational component having at least one module of machine instructions for communicating with computational equipment providing one or more location estimators, at least one of which is

included in the category (b1) following, and at least one of said location estimators is included in the category (b2) following:

(b1) a first category of adaptable location estimators, wherein each said adaptable location estimator generates a geographical location estimate for each mobile station ($\mathbf{M_{b1}}$) of a plurality of said mobile stations when said adaptable location estimator receives first corresponding input values obtained from transmissions between said mobile station $\mathbf{M_{b1}}$ and a plurality of the communication stations, and wherein each said adaptable location estimator adapts its generated geographical location estimates according to changes in said data collections of said archive;

(b2) said second category of location estimators, wherein each said location estimator of said second category determines a location for each mobile station ($\mathbf{M_{b2}}$) of a plurality of said mobile stations by using second corresponding input values obtained from wireless signals, S, received by $\mathbf{M_{b2}}$, or another of said mobile stations, from a plurality of non-terrestrial transmitting stations above and not supported on the Earth's surface, wherein said wireless signals S provide time values for determining a spatial range between: (i) $\mathbf{M_{b2}}$ or the another mobile station, and (ii) each of at least two of the non-terrestrial stations, wherein the spatial ranges are determined from transmission times for each of the wireless signals transmitted by the at least two of the non-terrestrial transmitting stations;

wherein for one of the mobile stations **M**, a location estimator selector of the at least one module selects one or more of: one of said adaptable location estimators, and one of said location estimators of said second category according to whether said first corresponding input values are available for the mobile station **M** being an instance of $\mathbf{M_{b1}}$, or said second corresponding input values are available for the mobile station **M** being an instance of $\mathbf{M_{b2}}$.

107. (Currently Amended) The location system of Claim 106, further including a combiner location estimator for determining a resulting location estimate of said mobile station **M** by combining a plurality of location estimates from the selected one or more location estimators;

wherein the combiner is provided by the computational equipment.

Claims 108 - 110 (cancelled)

Claims 111 - 112 (cancelled)

113. (Currently Amended) A location system for locating wireless mobile stations, each capable of using wireless signals in communicating with a plurality of networked stationary communication stations, comprising:

a transceiver: (a) for detecting a direction of at least a portion of the wireless signals transmitted from a corresponding one of the mobile stations, and (b) for communicating with said networked communication stations information related to a location of said wireless mobile stations;

a signal analyzer for determining whether a detected wireless signal from said mobile stations has been one of: reflected and deflected;

one or more location estimators for providing one or more location estimates of said mobile stations, wherein at least one of said location estimators utilizes the wireless signals from said mobile stations; and

a vehicular transport for moving at least said transceiver when locating said wireless mobile stations;

wherein:

(a) for locating at least one of the mobile stations, the direction of the transmitted signals from the at least one mobile station is used,

(b) for locating at least one of the mobile stations, the transceiver communications with the communication stations is used,

(c) for locating at least one of the mobile stations, an output from the signal analyzer is used, and

(d) for locating at least one of the mobile stations, of the one or more location estimates therefor is used.

114. (Previously Presented) The location system as claimed in Claim 113, wherein said signal analyzer includes a comparator for comparing: (a) a distance of one of said mobile stations from said transceiver using a signal strength of said wireless signals from said one mobile station, with (b) a distance of said one mobile station from said transceiver using a signal time delay measurement of wireless signal from said one mobile station.

115. (Previously Presented) The location system as claimed in Claim 113, further including one or more transceiver location estimators for estimating a location of said transceiver, wherein at least one of said transceiver location estimators uses data from wireless signals communicated between: (i) said transport, and (ii) one of: said networked communication stations and a global positioning satellite.

116. (Previously Presented) The location system as claimed in Claim 115, further including a deadreckoning component operatively movable with movements of said transport for estimating a change in a location of said transceiver, wherein said deadreckoning component determines incremental updates to at least one location estimate of said transport output by at least one of said transceiver location estimators.

Claim 117 (cancelled)

118. (Currently Amended) A method for locating a wireless mobile station, comprising performing the following steps by computational equipment:

(A1) receiving location information for the mobile station by the steps (a) and (b) following:

(a) first obtaining a first instance of the location information when supplied with signal time delay data obtained from wireless signal data received by the mobile station from a satellite, wherein a geographic range corresponding to the signal time delay data is used to determine the first instance;

wherein communication between the mobile station and at least one terrestrial transceiver is used to improve said first instance; and

(b) second obtaining a second instance of the location information of the mobile station when supplied with second data indicative of time delays of wireless signals transmitted between the mobile station and a plurality of terrestrial transceivers cooperatively linked together for use in two way communication with the mobile station, wherein at least one of (i) and (ii) following are used for obtaining the second instance: (i) a representation of a locus of locations having substantially a same time difference of arrival for wireless signals communicated between: the mobile station, and each of at least two of the transceivers, and (ii) an area obtained by a correspondence between surveyed wireless signaling characteristics of the area, and wireless signals communicated between the mobile station and the transceivers;

wherein the second instance does not depend on a geographical location of the mobile station obtained from information indicative of a distance between the mobile station and at least one of the one or more satellites;

(A2) determining resulting location information, for each of one or more locations of said mobile station, using at least one of: [[(a)]] a first value obtained from the first instance, and [[(b)]] a second value obtained from the second instance;

(A3) outputting said resulting location information for each of the one or more locations;

wherein: the first value is used to obtain the resulting information for one of the locations, and the second value is used to obtain the resulting information for one of the locations.

119. (Currently Amended) A method for locating a plurality of wireless mobile stations, wherein for each of the wireless mobile stations, measurements of wireless signals are used such that at least one of:

(i) said measurements, and

(ii) said wireless signals,

is transmitted between said mobile station and at least one of a plurality of fixed location communication stations, each communication station capable of at least one of receiving wireless signals from, and transmitting wireless signals to said mobile station, comprising performing the following steps by computational equipment:

(1) receiving, from a first mobile station location estimator corresponding first information, and from a second mobile station location estimator corresponding second information, wherein each of the corresponding first and second information relates to geographical approximations for a location of a mobile station ($\mathbf{M_1}$) of the mobile stations, wherein (a) and (b) following hold:

(a) for determining a geographical approximation, GA_A, for a location, L_A, of a second of the mobile stations (**M_2**) at a time T_A, said first location estimator generates GA_A without requiring a prior geographical location approximation generated by said second location estimator for locating **M_2** at substantially the location L_A at substantially the time T_A, and,

(b) for estimating a geographical approximation, GA_B, for a location, L_B, of a third one of the mobile stations (**M_3**) at a time T_B, said second location estimator generates GA_B without requiring a prior geographical location approximation generated by said first location estimator for locating **M_3** at the location L_B at substantially the time T_B;

wherein the first and second mobile station location estimators are provided by computational machinery;

wherein for determining the first information, said first mobile station location estimator activates or receives an output from a signal processing technique for estimating a location of the mobile station **M_1** when supplied with data obtained from wireless signals received by **M_1** from one or more transmitting stations above and not supported on the Earth's surface, wherein said wireless signals provide time values, and said signal processing technique uses at least one differential between a time of transmission and a time of arrival for the wireless signals transmitted by a plurality of the transmitting stations ~~for determining~~;

(2) determining a resulting location estimate of said mobile station **M_1**;

wherein said step of determining (2) includes one of the substeps (B1) through (B3) following:

(B1) when said first and second information include, respectively, first and second geographical approximations of said mobile station **M_1**, combining said first and second geographical approximations so that said resulting location estimate is dependent on each of said first and second location geographical approximations;

(B2) changing one or more rating values for rating at least one of said first and second information, wherein said rating values are indicative of expected performances of said first and second location information in locating the mobile station **M_1**; and

(B3) selecting one of said first and second information for receiving preference in determining said resulting location estimate.

120. (Previously Presented) The method of Claim 119, wherein said mobile station **M_1** is part of a mobile base station.

121. (Currently Amended) A method for locating a terrestrial wireless mobile station capable of wireless two way communication with a plurality of fixed location terrestrial stations, comprising performing the following steps by computational machinery:

receiving, from computational machinery performing a plurality of mobile station location techniques, a plurality of instances of location information having one or more location estimates of the mobile station, wherein said location techniques generate the instances of location information when said location techniques are supplied with corresponding input information upon which their location information is dependent, and wherein the corresponding input information is at least partially derived from measurements of wireless signals transmitted from or received at the mobile station;

wherein said step of receiving includes steps (a) and (b) following:

(a) first receiving, from a first of said location techniques, first location information for the mobile station, wherein said corresponding input information for said first location technique includes timing data from wireless signals transmitted from one or more global positioning satellites, and received by the mobile station, wherein said first location technique also uses information dependent upon a location of a terrestrial receiver, **TS**, that receives a wireless transmission[[s]] from the mobile station, and resulting in the first location information being dependent on the location of **TS** and the timing data, wherein **TS** is remote from the mobile station;

(b) second receiving, from a second of said location techniques, second location information for the mobile station, wherein said corresponding input information for said second location technique includes data that is a function of a signal time delay of wireless signals transmitted between the wireless mobile station and one of said plurality of fixed location terrestrial stations during a plurality of transmissions between the mobile station and the one terrestrial station;

wherein for obtaining the corresponding input information for the second location technique, there is at least one transmission from the mobile station to the one terrestrial station, and at least one transmission from the one terrestrial station to the mobiles station, and wherein said second location information is determined by said second location technique at a site whose location is spaced apart from the mobile station;

determining, a plurality of resulting location estimates for the mobile station, wherein said step of determining includes steps (c) and (d) following:

(c) obtaining at least one of said resulting location estimates using an instance ($\mathbf{I_1}$) of said first location information for locating the mobile station; and

(d) obtaining at least one of said resulting location estimates using an instance ($\mathbf{I_2}$) of said second location information for locating the mobile station.

122. (Previously Presented) The method as claimed in Claim 121, wherein said step of determining includes:

establishing a priority between a location estimate of said instance $\mathbf{I_1}$ of the first location information, and a location estimate of said instance $\mathbf{I_2}$ of the second location information.

123. (Previously Presented) The method as claimed in Claim 122, wherein said step of establishing a priority includes obtaining a confidence value for one or more of: (a) a first location estimate for said instance $\mathbf{I_1}$ of the first location information; and (b) a second location estimate for said instance $\mathbf{I_2}$ of the second location information;

wherein each said confidence value is indicative of a likelihood of the mobile station having a location represented by a corresponding one of the first and second location estimates for the confidence value.

124. (Previously Presented) The method as claimed in Claim 121, wherein said step of determining includes preferring a location estimate of said instance $\mathbf{I_1}$ of the first location information over a location estimate of said instance $\mathbf{I_2}$ of the second location information when both are available for substantially a same location of the mobile station.

125. (Previously Presented) The method as claimed in Claim 121, wherein said step of determining includes, for at least one of said resulting location estimates, determining one or more of: (a) a velocity of the mobile station, (b) an acceleration of the mobile station, and (c) one or more geographical features determined using said at least one resulting location estimate.

126. (Currently Amended) A method for providing a location estimate of a wireless mobile station ~~using~~ dependent upon measurements of wireless signals,

wherein for receiving a first collection of measurements related to signal time delay of wireless signals, the wireless signals received by said mobile station and transmitted from one or more satellites, there is a predetermined corresponding location technique for determining first location information of the mobile station;

wherein when provided with the first collection, the predetermined corresponding location technique uses the first collection to determine a location for the mobile station;

wherein for receiving a second collection of measurements obtained from wireless signals transmitted between said mobile station and one or more fixed location terrestrial stations, at least when said first collection is not available, there is a predetermined corresponding location technique for determining second location information of the mobile station;

wherein said second collection includes signal time delay data of wireless signals transmitted between the mobile station and the fixed location terrestrial stations, there being at least one wireless transmission from the mobile station to the one or more fixed location terrestrial stations in order to provide the predetermined corresponding location technique for receiving the second collection with the second collection;

wherein said second collection of measurements is used by the corresponding location technique for receiving the second collection to determine a location estimate of the mobile station by determining a locus of locations from at least one of the fixed location terrestrial stations, wherein for locations identified by said locus

of locations, a signal time delay dependent condition is satisfied using the signal time delay data, comprising performing the following steps by computational equipment:

first obtaining the first location information of said mobile station, the first location information determined by computational machinery when said corresponding location technique for using the first collection is supplied with an instance of said first collection;

second obtaining the second location information of said mobile station, the second location information determined by computational machinery when said corresponding location technique for receiving the second collection is supplied with an instance of said second collection; and

outputting, to a source for accessing location data for said mobile station, resulting location information that is dependent upon: at least one of said first and second location information, and also dependent upon data for indicating a likelihood of the mobile station being in a geographical extent represented by of at least one of said first location information and said second location information.

127. (Previously Presented) The method as claimed in Claim 126, wherein the data for indicating a likelihood includes first data indicative of a likelihood of the mobile station being in a geographical extent represented by the said first location information, and includes second data indicative of a likelihood of the mobile station being in a geographical extent represented by the second location information.

128. (Previously Presented) The method of Claim 126, wherein said step of outputting includes at least one of:

(a) preferring one of said first and second location information over the other when both are available for locating the mobile station; and

(b) combining said first and second location information when both are available for locating the mobile station.

129. (Currently Amended) The method of Claim 126, wherein said signal time delay dependent condition ~~includes obtaining~~ is dependent upon one of a time of arrival and a time difference of arrival related to wireless signals transmitted between the mobile station and the at least one of the fixed location terrestrial stations.

130. (Previously Presented) The method of Claim 126, further includes a step of transmitting one of said first and second collections on at least a portion of the Internet.

Claim 131 (cancelled)

132. (Previously Presented) The method as claimed in Claim 454, wherein said mobile station **M** is one of: (1) co-located with a process that activates at least one of said location evaluators; and (2) includes a process that activates at least one of said location evaluators.

Claim 133 (cancelled)

Claim 134 (cancelled)

Claim 135 (cancelled).

Claim 136 (cancelled)

137. (Currently Amended) A method for locating a mobile station **M** wherein said method uses wireless signal measurements obtained from transmissions between said mobile station **M** and a plurality of fixed location communication stations, wherein each of said communication stations includes one or more of a transmitter and a receiver for wirelessly communicating with said mobile station **M**;

wherein first and second mobile station location evaluators are available, wherein each of said location evaluators determine location related information for locating said mobile station **M** as a result of said location evaluator being supplied with data having values obtained from wireless signal measurements, wherein (A) and (B) following hold:

(A) said first location evaluator performs one or more of the following techniques (i), (ii), (iii) and (iv) as a result of said techniques being supplied with a corresponding instance of said data:

(i) a first technique for determining a first resulting data related to a location of the mobile station **M** from a first corresponding instance of said data, the first corresponding instance of said data dependent upon a two way communication between the mobile station **M** and at least one of the communication stations **CS**,

wherein one of: a wireless signal angle of arrival, and a time difference of arrival between the mobile station **M** and the at least one of the communication stations **CS** from the first corresponding instance of said data is used for determining said first resulting data;

(ii) a second technique for determining a second resulting data related to a location of the mobile station **M**, using timing values from a second corresponding instance of said data obtained from signals received at the mobile station **M** from a plurality of satellites wherein the second technique uses wireless signals between the mobile station **M** and at least one of the communication stations to improve a performance for obtaining the second resulting data;

(iii) a third technique for determining a third resulting data related to a location of the mobile station **M** by recognizing signal characteristics from a third corresponding instance of said data, wherein said third technique includes the steps of (a) and (b) following:

(a) accessing information obtained from an association that associates, for each geographical location (**L**) of a plurality of geographical locations, (a1) and (a2) following:

(a1) a representation of the geographical location **L**, and

(a2) for the geographical location **L**, corresponding signal information indicative of at least one characteristic of a signal **S** previously transmitted between some mobile station, $\mathbf{M_L}$, and one or more of the communication stations, when the some mobile station $\mathbf{M_L}$ transmitted **S** from approximately the geographical location **L**;

wherein for at least most of said geographical locations **L**, $\mathbf{M_L}$ is different from the mobile station **M**;

(b) determining one or more likely location estimates for the mobile station **M** from a similarity between (b1) and (b2) following:

(b1) the third corresponding instance of said data, the third corresponding instance including values for one or more signal characteristics determined from wireless signals communicated between the mobile station **M** and the communication stations, wherein said signal characteristics include at least a first measurement of a non-line of sight signal transmission between the mobile station **M** and one of the communication stations, and

(b2) a portion of the accessed information that is indicative of the signal information of (a2); and

(iv) a fourth technique for determining a fourth resulting data related to a location of the mobile station **M**, wherein said fourth technique statistically determines an expected location of the mobile station M by correlating (c) and (d) following:

(c) wireless signal related values obtained from a fourth corresponding instance of said data, and

(d) data, **D**, wherein for each location $\mathbf{L_D}$ of a plurality of locations, said data **D** includes one or more wireless signal measurements related to a wireless communication between some mobile station different from the mobile station **M** when the different mobile station is substantially at $\mathbf{L_D}$,

wherein said correlation is used for determining a likely geographical indication, **GR**, for a location for the mobile station **M**; and

(B) for said one or more of said techniques performed by said first location evaluator, said second location evaluator performs a different combination of one or more of said first, second, third and fourth techniques when supplied with corresponding instances of said data for the one or more techniques of said different combination of techniques;

comprising the following steps performed by computational equipment:

first obtaining, from said first location evaluator, first location related information, for at least one location of **M**, as a result of one or more of the first, second, third and fourth corresponding instances of data being used by their respective one or more of the techniques performed by computational machinery configured to perform the first location evaluator;

second obtaining, from said second location evaluator, second location related information, for at least one location of **M**, as a result of one or more of the first, second, third and fourth corresponding instances being used by their respective said one or more of the techniques performed by computational machinery configured to perform second location evaluator;

wherein for locating the mobile station **M**, at least one of said first and second location evaluators determines a corresponding one of said first and second location related information using said second resulting data; and

third obtaining a resulting location estimate of the mobile station **M** dependent upon at least one of: (a) said first location related information, and (b) said second location related information.

138. (Currently Amended) The method of Claim 137, wherein one or more of:

(a) said third technique includes ~~a step of~~ changing the third resulting data with a change to the association; and

(b) said fourth technique includes ~~a step of~~ performing one of: a principle decomposition analysis, a least squares analysis, and a partial least squares analysis;

wherein at least one of the third and fourth techniques ~~steps of changing and performing~~ is activated for obtaining the resulting location estimate.

Claim 139 (cancelled)

140. (Currently Amended) A method for locating a mobile station ~~using~~ dependent upon wireless signal measurements obtained from transmissions between said mobile station and at least one of a plurality of terrestrial transceivers capable of wirelessly detecting said mobile station, comprising the following steps performed by computational machinery:

providing access to at least two of the location techniques (a) through (c) following:

(a) a first location technique for triangulating or trilaterating a location of the mobile station, wherein for each transceiver **T** of three or more of the terrestrial transceivers, one of: a signal time of arrival, and a signal time difference of arrival between the mobile station and the transceiver **T** is determined using a first input obtained from the wireless signal measurements,

wherein for at least one of the three or more transceivers $\mathbf{T_0}$, the signals for obtaining the wireless signal measurements are received at the transceiver $\mathbf{T_0}$ during a plurality of wireless signal transmissions between the mobile station and the transceiver $\mathbf{T_0}$, with at least one of the transmissions being from the mobile station to the transceiver $\mathbf{T_0}$, and at least one of the transmissions being from the transceiver $\mathbf{T_0}$ to the mobile station;

(b) a second location technique using a second input obtained from one or more transmissions between the mobile station and the transceivers, said second input further including time delay measurements of signals received at the mobile station from one or more satellites;

(c) a third location technique that determines a location of the mobile station by using a plurality of pairs of (i) and (ii) following:

(i) characteristics of wireless signals communicated between some mobile station and one or more of the transceivers, and

(ii) a location of said some mobile station during the communication,

wherein when said third technique is supplied with a third input of characteristics of wireless signals communicated between said mobile station and one or more of the transceivers, data indicative of a location of the mobile station is obtained from a similarity between the third input and the characteristics of wireless signals of (c)(i);

determining whether at least said second location technique has its corresponding input available for determining a first location estimate of said mobile station;

determining a second location estimate of said mobile station by activating an accessible one of said location techniques different from said second location technique when the corresponding input for said different location technique is available;

receiving at least one of said first and second location estimates;

obtaining resulting location information for transmitting on a communications network, wherein said resulting location information is obtained using at least one of said first location estimate and said second location estimate;

wherein when said mobile station is at a first location, an instance of at least said first location estimate is used in said obtaining step for obtaining a first corresponding instance of said resulting location information, and when said mobile station is at a second location, an instance of at least said second location estimate is used in said obtaining step for obtaining a second corresponding instance of said resulting location information; and

wherein for at least one of the first and the second locations, said obtaining step includes one of: (1) a step of improving upon said instance of at least said first location estimate, and (2) a step of providing information indicative of an accuracy of said first corresponding instance of said resulting location information.

141. (Previously Presented) The method as claimed in Claim 140, wherein at least two of said location techniques generate location estimates of said mobile station wherein neither of said at least two location techniques depend upon the other one for their corresponding input to be available.

142. (Currently Amended) A method for locating a mobile station, **M**, of a plurality of mobile stations using wireless signal measurements obtained from transmissions between the mobile station **M** and at least one of a plurality of communication stations, wherein each of said communication stations includes one or more of a transmitter and a receiver for wirelessly communicating with each of the mobile stations, comprising performing the following steps by computational machinery:

providing access to computational equipment that is configured to perform at least first and second location estimators for estimating a location of the mobile station **M**, wherein for said first location estimator to estimate a location of the mobile station **M**, said first location estimator is dependent upon a location representation from ~~each of~~ one or more of the location techniques of the following (a) through (e) location technique categories, and for said second location estimator to estimate a location of the mobile station **M**, said second estimator is dependent upon a location representation from one of the following (a) through (e) location technique categories, wherein the corresponding input for at least one of the first and second location estimators includes wireless location indicative data that is different from the wireless location indicative data included in the corresponding input of the other of the first and second location estimators;

the above cited location technique categories include:

(a) trilateration and triangulation techniques for determining a location estimate of each mobile station ($\mathbf{M_a}$) of at least some of the mobile stations at a site not co-located with the mobile station $\mathbf{M_a}$, wherein for some e of the communication stations in communication with the mobile station $\mathbf{M_a}$, one of: a wireless signal time of arrival, and a wireless signal time difference of arrival between the mobile station $\mathbf{M_a}$ and the some communication stations is obtained using a first input obtained from timing measurements of wireless signal measurements obtained from transmissions between the mobile station $\mathbf{M_a}$ and the communication stations;

wherein for at least one of the some communication stations, **CS**, the timing measurements are obtained from signals communicated during a plurality of wireless signal transmissions between the mobile station $\mathbf{M_a}$ and **CS**, with at least one of the transmissions being from the mobile station $\mathbf{M_a}$ to **CS**;

(b) a stochastic technique for determining a location estimate of each mobile station ($\mathbf{M_b}$) of at least some of the mobile stations, wherein said stochastic technique uses a statistical correlation for correlating (i) and (ii) following:

(i) a second input obtained from wireless signal measurements obtained from transmissions between the mobile station $\mathbf{M_b}$ and the communication stations, and

(ii) data, **D**, wherein for each location ($\mathbf{L_B}$) of a plurality of locations, said data **D** includes one or more wireless signal measurements related to a wireless communication between some mobile station that is substantially at $\mathbf{L_B}$;

wherein for at least most of said geographical locations $\mathbf{L_B}$, said some mobile station is different from the mobile station $\mathbf{M_b}$; and

wherein said correlation is used for determining a likely geographical range, **GR**, for a location for the mobile station $\mathbf{M_b}$ and data indicative of a probability that the mobile station $\mathbf{M_b}$ is within the likely geographical range **GR**;

(c) a learning technique for determining a location estimate of each mobile station ($\mathbf{M_c}$) of more than one of the mobile stations, by learning an association, wherein said association is determined by a training process using a plurality of data pairs, each said pair including: first information indicative of a location $\mathbf{L_C}$ of some mobile station ($\mathbf{M_i}$), and second information from wireless signal measurements between said some mobile station $\mathbf{M_i}$ and one or more of the communication stations when said some mobile station $\mathbf{M_i}$ is at the location $\mathbf{L_C}$,

wherein when said learning technique is supplied with a third input obtained from the wireless signal measurements obtained from transmissions between the mobile station $\mathbf{M_c}$ and at least one of a plurality of the communication stations, data indicative of a location for the mobile station $\mathbf{M_c}$ is determined;

(d) a pattern recognition location technique for estimating a location of each mobile station ($\mathbf{M_d}$) of more than one of the mobile stations, wherein said pattern recognition location technique estimates a location of the mobile station $\mathbf{M_d}$ at a location ($\mathbf{L_D}$) by recognizing a pattern of characteristics of a fourth input obtained from the wireless signal measurements obtained from transmissions between the mobile station $\mathbf{M_d}$ and the communication stations, wherein said pattern of characteristics includes signal characteristic data indicative of wireless signal transmissions between the mobile station $\mathbf{M_d}$ and one or more of the communication stations; and

(e) a fifth location technique for determining a location estimate of each mobile station ($\mathbf{M_e}$) of more than one of the mobile stations, wherein said fifth location technique uses a fifth input obtained from time delay measurements from signals received at the mobile station $\mathbf{M_e}$ from one or more non-terrestrial communication stations above and not supported on the earth's surface;

determining whether said first location estimator has its corresponding input available for determining a first location estimate of the mobile station **M**;

determining a second location estimate of said mobile station **M** by activating said second location estimator with its corresponding input when the corresponding input for said second location estimator is available, and said corresponding input to said first location estimator is unavailable;

wherein for locating the mobile station **M**, at least one of said first and second location estimators uses said fifth technique for determining a geographical location indication for **M**;

transmitting resulting location information on a communications network, wherein said resulting location information is obtained using at least one of said first location estimate and said second location estimate;

wherein when said mobile station **M** is at a location ($\mathbf{L_1}$), an instance of at least said first location estimate is used for obtaining a first corresponding instance of said resulting location information, and when said mobile station **M** is at a location ($\mathbf{L_2}$), an instance of at least said second location estimate is used for obtaining a second corresponding instance of said resulting location information; and

wherein prior to the step of transmitting the resulting location information for the location $\mathbf{L_1}$, one of the following steps is performed: (1) a step of improving upon said instance of at least said first location estimate, and (2) a step of providing information indicative of an accuracy of said first corresponding instance of said resulting location information.

143. (Previously Presented) The method as claimed in Claim 142, wherein

said first, second, third, and fourth inputs include data related to one or more of: a wireless signal time delay, and a wireless signal strength; and

said fifth input includes data related to GPS satellite signals.

Claims 144 - 158 (cancelled)

159. (Currently Amended) A method for locating at least one mobile station, **M**, of a plurality of mobile stations, using wireless signal data obtained from transmissions between said mobile station **M** and at least one of a plurality of communication stations, each of the communication stations capable of at least one of: wirelessly detecting said mobile station **M**, and wirelessly being detected by said mobile station **M**, wherein at least some of said communication stations are able to provide voice communication with some of the mobile stations, including the mobile station **M**, comprising performing the following steps by computational machinery:

receiving, for each mobile station ($\mathbf{M_i}$) of: the mobile station **M**, and one or more additional ones of the mobile stations, wireless signal data obtained from transmissions between: (i) said communication stations, and (ii) said mobile station $\mathbf{M_i}$ at an unknown location, wherein said wireless signal data includes at least two of (A1) through (A3) following:

(A1) data obtained using signal timing measurements of wireless signal transmissions between said mobile station $\mathbf{M_i}$ and a set $\mathbf{S_1}$ of one or more of said at least some communication stations at terrestrial locations, wherein for at least one of the communication stations, **CS**, of the set $\mathbf{S_1}$, there is a corresponding portion of the signal timing measurements that are obtained as a result of a plurality of wireless signal transmissions between the mobile station $\mathbf{M_i}$ and **CS**, with at least one of the transmissions being from the mobile station $\mathbf{M_i}$ to **CS**;

(A2) data obtained using time delay measurements from wireless signal transmissions between one or more non-terrestrial communication stations above and not supported on the Earth's surface, and said mobile station $\mathbf{M_i}$;

(A3) signal characteristic data, **D**, of wireless signal transmissions between said mobile station $\mathbf{M_i}$ and a set $\mathbf{S_3}$ of one or more of said communication stations, wherein (i) there is a data store including corresponding signal characteristic data for each of a plurality of terrestrial locations in a wireless coverage area provided by $\mathbf{S_3}$, (ii) said signal characteristic data **D** includes information for determining one of a correspondence and a similarity with the corresponding signal characteristic data in the data store for one or more locations **L** of the plurality of locations, and (iii) for at least one of the locations **L**, said corresponding signal characteristic data for **L** is obtained from signal transmissions from a mobile station different from $\mathbf{M_i}$;

generating a location estimate for the unknown location of said mobile station **M**, said location estimate dependent upon a geographical extent output from a corresponding computational machinery implemented instance of each of at least the location technique (B2) following, and one other of the following location techniques (B1) and (B3):

(B1) a first technique that determines location information indicative of a range between at least one of the communication stations and a mobile station being located;

wherein for locating the mobile station **M**, said corresponding instance of said first technique uses the data obtained in (A1) for **M** being $\mathbf{M_i}$, and an instance of the set $\mathbf{S_1}$ including one of the terrestrial communication stations ($\mathbf{CS_M}$) for determining a range between the mobile station **M** and the communication station $\mathbf{CS_M}$ using signal timing measurements obtained as a result of a plurality of wireless signal transmissions between the mobile station **M** and $\mathbf{CS_M}$;

(B2) a second technique that determines location information indicative of a range between a non-terrestrial communication station above and not supported on the Earth's surface, and a mobile station being located;

wherein for locating the mobile station **M**, said corresponding instance of said second technique uses: (i) the data obtained in (A2) for **M** being $\mathbf{M_i}$, and (ii) one of the one or more non-terrestrial communication stations (**S**) to determine a range between the mobile station **M** and the non-terrestrial communication station **S**; and

(B3) a third technique that determines location information indicative of a wireless signal similarity or correspondence for transmissions between the communication stations and a mobile station being located;

wherein for locating the mobile station **M**, said corresponding instance of said third technique uses: (i) the signal characteristics **D** from (A3) for **M** being $\mathbf{M_i}$, and (ii) the data store of (A3).

160. (Previously Presented) The method as claimed in Claim 159, wherein said step of generating includes performing a stochastic technique for generating said location estimate of said mobile station **M**, wherein said stochastic technique uses a statistical correlation for correlating (1) and (2) following:

(1) information obtained from at least one of signal strength and signal time delay measurements of wireless signals between the mobile station **M** and the communication stations, and

(2) data, **U**, wherein for each location (**LOC**) of a plurality of locations, said data **U** includes one or more wireless signal measurements related to a wireless communication between some mobile station different from the mobile station **M** when the different mobile station is substantially at **LOC**, and;

wherein said correlation is used for determining: (i) a likely geographical indication, **GR**, for a location for the mobile station **M**, and (ii) data indicative of a probability that the mobile station **M** is within the likely geographical indication **GR**.

161. (Previously Presented) The method as claimed in Claim 159, wherein said step of generating includes providing at least one instance of said signal characteristic data **D** of (A3) for **M** being $\mathbf{M_i}$, to a pattern recognizer included in said third technique instance, said pattern recognizer being trainable when repeatedly provided with previously obtained wireless signal data indicative of a plurality of known mobile station locations.

Claim 162 (cancelled)

Claims 163 - 164 (cancelled)

165. (Currently Amended) The location system as claimed in Claim 484, wherein each of the following limitations holds:

(a) said transmitting stations include GPS satellites;

(b) said network provides for a transmission ~~with the~~ to at least one of said two or more location ~~estimating~~ providing sources [[via]] using at least a portion of the Internet different from the network; and

(c) said selection component ~~process~~ is activated by the network node.

Claims 166 - 168 (cancelled)

Claims 169 - 171 (cancelled)

172. (Currently Amended) The mobile station location system of Claim 502, further including at least one data storage provided by the equipment, or provided by computational machinery that is in operative communication with the equipment, the at least one data storage having information indicative of past locations

of some of the mobile stations provided by at least one of said estimating resources in providing previous location estimates of at least some of the mobile stations of **Σ,** wherein said information indicative of past locations is used for determining information indicative of a location of at least one mobile station being an instance of the mobile station $\mathbf{M_0}$;

wherein the information indicative of a location of the at least one mobile station is ~~provided to the location obtaining component~~ used by the equipment for obtaining the location estimate.

Claims 173 - 178 (cancelled)

179. (Currently Amended) A method for locating a wireless mobile station, comprising:

performing by computational machinery the following steps (A1) through (A3) for locating the mobile station;

(A1) obtaining location related information for locating the mobile station, said location related information obtained from using at least one of (a) and (b) following:

(a) wireless timing signals received by the mobile station from one or more satellites, wherein said timing signals from each of the one or more satellites identify a location of the mobile station; and

(b) time delays of wireless signals transmitted between the mobile station and one or more transceivers of a plurality of terrestrial transceivers cooperatively linked together for use in locating the mobile station, wherein said time delays identify a locus of locations of the mobile station from at least one of the transceivers, and wherein for one of the one or more transceivers, a corresponding one of the time delays is obtained from signals transmitted during a plurality of wireless signal transmissions between the mobile station and the at least one transceiver, with at least one of the transmissions being from the mobile station to the at least one transceiver;

wherein an instance of the location related information obtained from each of (a) and (b) is used at some time for determining a respective location of the mobile station;

(A2) determining data for a graphical presentation of a likely location of the mobile station from at least one of the instances of the location related information by determining a likely roadway upon which the mobile station is located; and

(A3) providing said data for a graphical presentation for displaying on a display device;

wherein for at least one performance (P) ~~of the repeated performances~~ of the steps (A1) through (A3), the location related information from the wireless timing signals of (a) ~~for P~~ is preferred for determining the corresponding graphical presentation for P over location related information from time delays of timing signals of (b), unless there is a reduced or no effectiveness for locating the mobile station by wireless timing signals according to (a) ~~for P~~.

180. (Currently Amended) The method of Claim 85, wherein for at least one occurrence of locating one of the mobile stations for being **M** ~~said mobile station **M**~~, said first and second estimators determine, respectively, said first and second geographical indications independently of one another.

Claim 181 (cancelled)

182. (Currently Amended) The method of Claim 85, wherein, for at least one occurrence of locating one of the mobile stations for being **M**, ~~said~~ at least one of the communication stations transmits a first wireless signal to the mobile station **M** and receives in response to said first wireless signal, a responsive signal from the mobile station **M**, and any intermediary devices for transmitting signals between said mobile station **M** and the communication stations are terrestrial.

Claims 183 - 184 (cancelled)

185. (Currently Amended) The method of Claim 85, further including for at least one occurrence of locating one of the mobile stations for being **M**, providing a wireless transmission to a second of the mobile stations, wherein said second mobile station is capable of moving toward the mobile station **M** by using said wireless transmission for locating **M**.

186. (Currently Amended) The method of Claim 85, wherein, for at least one occurrence of locating one of the mobile stations for being **M**, at least one of the first and second location estimators performs a technique for determining, for at least one of the communication stations, **CS**, ~~at least one of (i) and (ii) following:~~

~~(i)~~ a distance between the communication station **CS** and the mobile station **M**, said distance dependent upon signal time delay derived information, wherein for determining the distance, two way communication between the mobile station **M** and the communication station **CS** is used~~;~~ ~~and~~

~~(ii) an angular orientation about the communication station **CS** of a direction of the mobile station **M** determined using a measurement of a wireless signal direction of arrival of wireless signals transmitted between the mobile station **M** and the communication station **CS**,~~

wherein said at least one communication station **CS** is stationary.

187. (Currently Amended) The method of Claim 97, wherein for at least one occurrence of locating one of the mobile stations represented by the mobile station **M**, the corresponding instance of the resulting information is dependent upon at least one of the geographic estimations for the one mobile station according to a determination of an effectiveness of the at least one geographic estimation ~~said one or more location evaluators provide the first collection of location estimates using all three of the techniques (i), (ii) and (iii)~~.

188. (Currently Amended) The method of Claim 97, wherein the first collection includes second geographic location information determined using an activation of an instance of said second technique.

Claims 189 - 190 (cancelled)

191. (Previously Presented) The method of Claim 99, wherein said instance of the second technique uses a time difference of arrival of wireless signals transmitted between the second mobile station and one of the communication stations **CS** for determining a locus of points having a hyperbolic shape.

192. (Previously Presented) The method of Claim 99, wherein for said instance of the second technique, one of the communication stations **CS** transmits a first wireless signal to the second mobile station and receives in response to said first wireless signal, a responsive signal from the second mobile station, and any intermediary devices for transmitting signals between the second mobile station and the communication stations are terrestrial.

193. (Previously Presented) The method of Claim 99, wherein said step of first transmitting includes responding to an Internet request to locate the first mobile station.

Claim 194 (cancelled)

195. (Currently Amended) The method of Claim 97, wherein the first collection includes the third geographic location information determined using an activation of an instance of said third technique, wherein the activation includes performing one of: a least squares process, partial least squares process, and a principle decomposition process.

Claims 196 - 201 (cancelled)

202. (Currently Amended) The method of Claim 106, wherein at least one of said adaptable location estimators adapts by one of:

learning an association for associating, for each data collection of at least some of said data collections, said geographical location representation (a1) of the data collection with said set of said wireless signal data ~~measurements~~ (a2) of the data collection; and

determining a statistical similarity between (1) and (2) following: (1) wireless signal measurements obtained from transmissions between said mobile station **M** and the network, and (2) said wireless signal measurements (a2) of the data collections in said archive.

Claims 203 - 246 (cancelled)

Claims 247 - 248 (cancelled)

249. (Previously Presented) The method of Claim 137, further including the steps of:

performing the first obtaining step at a first time, and performing the second obtaining step at second time, wherein the first and second location related information are for different locations of the mobile station **M**.

Claim 250 (cancelled)

251. (Currently Amended) The method of Claim 85, further including for each of a plurality of instances of the mobile station **M**, a step of ~~at least one of the following steps:~~

~~(i)~~ activating, by computational machinery, at least one common predetermined mobile station location related component for determining said resulting location estimate for each of the instances of the mobile station **M** ~~and for determining a second resulting location of a second mobile station~~, wherein the location related component is not activated when determining said resulting location estimate for the instance of **M** until after at least ~~one of~~ said corresponding step of receiving is performed[[;]]

~~(ii) providing information for activating the first and second location estimators, wherein said information for activating is output by a common activation requesting component; and~~

~~(iii) accessing an attribute related to one or more of: an error in a geographical extent within which the mobile station **M** is expected to be, an accuracy in a geographical extent within which the mobile station **M** is expected to be, and a likelihood of the mobile station **M** being located in said resulting location estimate~~.

Claim 252 (cancelled)

253. (Currently Amended) The method of Claim 97, further including, following said step of obtaining, a step of selecting, by computational machinery, at least one of the one or more geographic estimations that is likely to be indicative of one of the unknown locations.

Claims 254 - 257 (cancelled)

258. (Currently Amended) The location system of Claim 106, wherein said interface includes a network interface for receiving a request for locating, at one or more locations, the mobile station **M** via the Internet; and further including an output gateway for transmitting, via the Internet to a particular Internet destination, a resulting location estimate for the mobile station **M**, wherein said resulting location estimate is dependent upon one or more location estimates determined [[by]] using a selected one of said plurality of location estimators, and wherein said resulting location estimate is determined according to a predefined data organization ~~an output criteria~~ for the [[one]] particular Internet destination, said resulting location estimate ~~output criteria~~ including one or more of: a representation of an accuracy of a location estimate provided by said resulting location estimate,

and a confidence in a location estimate ~~frequency of providing the one destination with one or more instances~~ of said resulting location estimates.

Claims 259 - 263 (cancelled)

264. (Currently Amended) The method of Claim 119, further including a step of outputting, by the computational equipment, said resulting location estimate to a predetermined destination via a communications network, and an accuracy of the resulting location estimate ~~dependent upon predetermined location accuracy criteria~~.

Claims 265 - 266 (cancelled)

267. (Currently Amended) The method of Claim 121, further including the steps of:

requesting, by computational machinery, one or more of the resulting location estimates via signals transmitted by a commercial mobile radio service provider, wherein the commercial radio service provider wirelessly communicates with the mobile station; and

transmitting, via a communication network, at least one location of the mobile station to a predetermined destination.

268. (Previously Presented) The method of Claim 126, wherein the resulting location is dependent upon at least the first location information.

Claims 269 - 272 (cancelled)

273. (Currently Amended) The method of Claim 99, wherein: for at least one of first and second geographical indications, the corresponding first or second output location data includes information indicative of ~~at least one of: a location~~ a likelihood of the at least one geographical indication including the corresponding one of the first or second mobile stations~~, an environmental condition of a location, and a description of a location processing performed~~.

Claims 274 - 276 (cancelled)

277. (Currently Amended) The method of Claim 99, further including the computational machinery performing steps of first and second determining, using at least one common predetermined mobile station location related component for determining, respectively, said first output location data and said second output location data, wherein said common predetermined component accesses the first and second output criteria for determining, respectively, said first and second output location data.

278. (Previously Presented) The method of Claim 99, wherein said steps of first and second transmitting includes outputting said first and second output location data via a common predetermined network interface.

279. (Currently Amended) The method of Claim 99, further including the computational machinery performing a step of accessing mobile station location output frequency information of said first output criteria.

Claim 280 (cancelled)

281. (Previously Presented) The method of Claim 99, wherein at least one of (a) and (b) following hold: (a) said first transmitting step includes determining a particular protocol for outputting said first output location data on the corresponding communication network for transmission to the corresponding destination for the first request, and (b) said second transmitting step includes determining a particular protocol for outputting said second output location data on the corresponding communication network for transmission to the corresponding destination for the second request.

282. (Previously Presented) The method of Claim 99, wherein at least one of (1) and (2) following hold: (1) said first output criteria includes information for determining said representation of said first geographical indication using a location of a known first geographical feature different from the communication stations, and (2) said second output criteria includes information for determining said representation of said second geographical indication using a location of a known second geographical feature different from the communication stations.

Claims 283 - 285 (cancelled)

286. (Previously Presented) The method of Claim 99, wherein said first output criteria includes information for determining a first location granularity at which a location estimate of the first mobile station is transmitted, and said second output criteria includes information for determining a second location granularity at which a location estimate of the second mobile station is transmitted, wherein said first and second granularity is different.

Claims 287 - 289 (cancelled)

290. (Previously Presented) The method of Claim 99, wherein at least one of said steps of receiving, first obtaining, second obtaining, first transmitting, and second transmitting receives or transmits wireless location related information on a TCP/IP network.

291. (Previously Presented) The method of Claim 99, wherein said step of first obtaining includes receiving a first location estimate from a first of said location determining sources which performs an instance, $\mathbf{I}_1$, of said

first technique for estimating a location of the first mobile station, wherein said instance $\mathbf{I_1}$ uses wireless signals, **S**, between the first mobile station and at least one of the communication stations to improve at least one performance characteristic of said instance $\mathbf{I_1}$ over a performance of $\mathbf{I_1}$ without use of the wireless signals between the first mobile station and the at least one communication station.

292. (Previously Presented) The method of Claim 291, wherein the instance $\mathbf{I_1}$ uses first information for locating the first mobile station, wherein the first information is dependent upon signal timing measurements from the wireless signals **S**.

293. (Previously Presented) The method of Claim 291, wherein the instance $\mathbf{I_1}$ uses first information from the wireless signals **S**, wherein the first information is dependent upon a wireless coverage area of the at least one communication station.

294. (Currently Amended) The method of Claim 99, further including the computational machinery performing a step of providing display information for displaying a representation of a location estimate **L** of the first mobile station, wherein said display information is for displaying a map of an area having the location estimate **L**, and for concurrently displaying information indicating an accuracy of the location estimate **L**.

295. (Previously Presented) The method of Claim 294, wherein said display information is displayed at a mobile station **M** that has requested a location of the first mobile station.

296. (Currently Amended) The method of Claim 118, wherein said outputting step includes providing accuracy information indicating an accuracy of said resulting location information, wherein said accuracy information is displayed with [[said]] at least one of the one or more locations of the mobile station.

297. (Currently Amended) The method of Claim 118, wherein for at least one of the one or more locations of the mobile station said step of determining uses both said first and second values.

Claim 298 (cancelled)

299. (Previously Presented) The method of Claim 118, wherein said first obtaining includes using information dependent upon a wireless coverage area of the at least one transceiver for improving said first instance.

300. (Previously Presented) The method of Claim 299, wherein the at least one transceiver is co-located with a base station for providing two way communication with the mobile station.

Claims 301 - 311 (cancelled)

312. (Previously Presented) The method of Claim 119, wherein:

(a) said first location estimator performs said signal processing technique for obtaining said first information for $\mathbf{M_1}$; and

(b) said first information is selected over said second information received from said second mobile station location estimator unless there is information indicating a likelihood of said first information providing reduced performance in locating said mobile station $\mathbf{M_1}$.

313. (Currently Amended) The method of Claim 119, wherein: at least one of said first and second location estimators performs a locus computing technique, wherein the locus computing technique utilizes measurements (**S**) of wireless signals for determining at least one locus of locations for the mobile station $\mathbf{M_1}$, the locus of locations being relative to at least one of the communication stations;

wherein at least one of said measurements **S** is obtained using a signal time delay between the mobile station $\mathbf{M_1}$, and the at least one ~~of the two or more~~ communication station[[s]]; wherein there is two way wireless communication between mobile station $\mathbf{M_1}$ and the at least one ~~of the~~ communication station[[s]].

314. (Currently Amended) The method of Claim 119, further including the computational equipment performing a step of providing display information for: (a) displaying a representation of said resulting location estimate, wherein said display information is for displaying with a map of an area having the resulting location estimate, and (b) concurrently displaying information indicative of an accuracy of the resulting location estimate.

315. (Previously Presented) The method of Claim 121, wherein said determining step includes determining at least one of said resulting location estimates as a function of a position of a known stationary geographical feature that is sufficiently close to a geographic location represented by one of the instances $\mathbf{I_1}$ or $\mathbf{I_2}$ so that the location of the geographical feature is used in providing said at least one resulting location estimate.

316. (Previously Presented) The method of Claim 121, wherein **TS** is included in one of: a mobile base station, and a fixed location base station.

317. (Previously Presented) The method of Claim 126, wherein for each of the location techniques, activation information is provided to the location technique via a predetermined common data distribution component.

318. (Currently Amended) The method of Claim 126, further including a step of determining, by computational equipment, said resulting location information according to output criteria corresponding to the

source, the output criteria indicative of one of: a ~~correctness~~ preciseness of the resulting location information, or a frequency by which additional instances of the resulting location information is determined.

319. (Previously Presented) The method of Claim 126, wherein the outputting step includes a step of providing said resulting location information for one of: performing a routing function for routing the mobile station, responding to a user of said mobile station request for location, locating a child, locating a stolen vehicle, and keeping entities apart.

320. (Previously Presented) The method of Claim 126, wherein said resulting location information includes one or more of:

(a) a value indicative of a likelihood of the mobile station being at a location estimate represented by the resulting location information;

(b) data identifying one or more known geographical extents, wherein each of the geographical extents is determined using an associated location estimate (**L**) of the mobile station determined using at least one of the first and second location information, wherein one of the geographical extents provides additional location information not provided by their associated location estimate **L**; and

(c) at least one of: a speed of the mobile station, a direction of the mobile station, a change in speed of the mobile station, and a change in direction of the mobile station.

321. (Previously Presented) The method of Claim 126, wherein said first location information is determined using wireless signals, **S**, between the mobile station and a terrestrial wireless transceiver to improve at least one performance characteristic of said corresponding location technique (**T**) for receiving the instance of the first collection over a performance of said location technique **T** without use of the wireless signals **S**.

322. (Currently Amended) The method of Claim 126, further including performing by computational equipment the steps of:

providing mapping data of an area having a location estimate (**L**) of said mobile station wherein **L** is included in said resulting location information, and

providing for concurrent display, with said mapping data, information indicating an accuracy of the location estimate **L**.

323. (Previously Presented) The method of Claim 454, wherein the step of determining includes using output criteria corresponding to an application identified for receiving the resulting location information, wherein an accuracy of the resulting location information is dependent upon the output criteria.

324. (Currently Amended) The method of Claim 323, wherein said output criteria includes at least some of:

(a) a granularity in which a location estimate of the mobile station **M** represented by said resulting location information is to be provided;
(b) a frequency with which repeated location estimates of the mobile station **M** are to be output to the application; and
(c) an indication as to whether a location estimate of the mobile station is to be adjusted according to a known geographical feature different from the communication stations.

Claim 325 (cancelled)

326. (Currently Amended) The method of Claim 468, wherein the computational machinery for performing said first ~~location~~ technique determines an instance of the first location information for a first of the mobile stations, using timing values from an instance $\mathbf{I_S}$ of said corresponding input obtained from satellite signals received at the first mobile station from a plurality of satellites, and wherein said instance $\mathbf{I_S}$ also includes additional data for improving on location information for the first mobile station obtained from said satellite signals, wherein said additional data is received by the first mobile station in a wireless communication between: said first mobile station, and a communication station of a collection of one or more of the plurality of terrestrial communication stations.

Claims 327 - 328 (cancelled)

329. (Currently Amended) The method of Claim 137, wherein ~~for a substantially same location,~~ at least a portion of the first location related information is used ~~preferred over at least a portion of the second location related information~~ in determining said resulting location estimate without using the second location related information when the second location related information is unavailable or unsatisfactory to use.

330. (Currently Amended) The method of Claim 140, further including the computational machinery performing a step of ~~wherein a performance of said obtaining step, using said first location estimate, includes said step of~~ improving upon said instance of at least said first location estimate so that said resulting location information is expected to be more accurate than said first location estimate.

331. (Currently Amended) The method of Claim 140, further including the computational machinery performing a step of ~~wherein a performance of said obtaining step includes said step of~~ providing information indicative of an accuracy of said first corresponding instance.

332. (Previously Presented) The method of Claim 142, wherein said step of improving upon said instance of at least said first location estimate is performed so that said first corresponding instance of said resulting location information is more accurate than said first location instance.

333. (Previously Presented) The method of Claim 142, wherein said step of providing information indicative of an accuracy of said first corresponding instance of said resulting location information is performed.

334. (Previously Presented) The method of Claim 142, wherein said first location estimator is dependent upon a result from at least two of said location technique categories, wherein one of said at least two location categories is one of said location technique categories (a) and (e).

335. (Currently Amended) The system of Claim 502, ~~wherein said mobile station location system includes~~ further including a combiner provided by the equipment, or provided by computational machinery that is in operative communication with the equipment, the combiner performing machine instructions for combining at least a portion of the first location information, and at least a portion of the second location information for $\mathbf{M_0}$ for obtaining the location estimate.

Claims 336 - 337 (cancelled)

338. (Currently Amended) The system of Claim 502, further including an output gateway provided by the equipment, or provided by computational machinery that is in operative communication with the equipment, the output gateway performing machine instructions for transmitting location information on one of the communications networks;

wherein the location information includes~~, including~~ said location estimate, ~~to the predetermined network destination,~~ wherein the output gateway provides for transmitting said location information according to one or more of the following transmission characteristics: (i) a destination for transmission, (ii) a data representation for transmission, (iii) a transmission protocol, (iv) a granularity of transmission, and (v) a frequency of transmitting an instance of the location information;

wherein the output gateway uses ~~is determined using~~ a description indicative of an ~~expected~~ input [[by]] to be transmitted to the predetermined network destination for determining the one or more transmission characteristics, the description being one of a plurality of ~~stored~~ descriptions indicative of ~~expected inputs~~ the one or more transmission characteristics [[by]] for a plurality of different destinations to which the output gateway transmits a corresponding instance of the location information.

Claims 339 - 342 (cancelled)

343. (Previously Presented) The system of Claim 338, wherein for transmitting the location information, the output gateway uses output criteria including at least some of:

(a) an identification of a transmission protocol;

(b) a granularity for representing a location estimate (**LE**) of the mobile station **M**, wherein **LE** is represented by said output location information; and

(c) a frequency with which repeated location estimates of the mobile station **M** are to be output to a destination corresponding to the request.

344. (Currently Amended) The method of Claim 159, further including, performing by computational machinery, a second step of generating a second location estimate for an unknown location of one of the additional mobile stations, wherein said second location estimate is dependent upon a different collection of one or more instances, of said first, second and third techniques than used to generate the location estimate for the mobile station **M**.

Claim 345 (cancelled)

346. (Currently Amended) The method of Claim 159, further including, performing by computational machinery, a step of outputting output location information for display, wherein a location accuracy of said location estimate is included in said output location information, said location accuracy identified with one or more geographical areas on a map displayed at a destination for the output location information.

347. (Previously Presented) The method of Claim 159, wherein said step of generating includes giving preference to the geographical extent from said instance of one of said first, second and third techniques over the geographical extent from said instance of a different one of said first, second and third techniques.

348. (Previously Presented) The method of Claim 159, wherein said step of generating includes preferring a common area of said geographical extents upon which the location estimate is dependent.

Claim 349 (cancelled)

350. (Currently Amended) A method for locating mobile stations, comprising performing the following steps performed by computational machinery:

providing access to each of a plurality of mobile station location determining computational machine resources for determining corresponding instances of location information for locating mobile stations using corresponding data obtained from measurements of wireless signals transmitted between:

(i) the mobile stations, and

(ii) one or more of: (1) one or more of a plurality of communication stations capable of at least wirelessly detecting the mobile stations, and (2) one or more non-terrestrial wireless signal transmitting stations above and not supported on the Earth's surface;

for each mobile station **M** of some of said mobile stations, perform steps (A) through ([[F]] E) following:

(A) first providing data to a first of said resources for obtaining a first instance of said corresponding location information for the mobile station **M** at a location $\mathbf{L_1}$, wherein in determining said first instance, said first resource uses a result from a first location technique, performed by computational machinery, the first location technique included in at least one of the location determining categories (b1) through (b5) following said step of second providing below;

(B) second providing data to a second of said resources for obtaining a second instance of said corresponding location information for the mobile station **M** at a location $\mathbf{L_2}$, wherein said second resource uses a result from a second location technique, performed by computational machinery, the second location technique included in at least one of the location determining categories (b1) through (b5) following;

wherein for locating an instance ($\mathbf{I_j}$) of at least some location of the mobile station **M** by the first resource, the first location technique is activated, and a location estimate from the second location technique is not used for determining the location estimate, and for locating an instance ($\mathbf{I_k}$) of at least some location of the mobile station **M** by the second resource, the second location technique is activated, and a location estimate from the first location technique is not used for determining a resulting location estimate from the second location technique;

the location determining categories being (b1) through (b5) following:

(b1) a first category of one or more location determining techniques, wherein each said technique ($\mathbf{T_1}$) of said first category determines a geographical extent $\mathbf{G_a}$ for a location of a mobile station ($\mathbf{M_a}$) by identifying a pattern of signal characteristics for wireless signals communicated between $\mathbf{M_a}$ and the communication stations as likely to have been a result of $\mathbf{M_a}$ being in $\mathbf{G_a}$, wherein said $\mathbf{T_1}$ performs the identification by determining a similarity between (b1-1) and (b1-2) following:

(b1-1) one or more of said signal characteristics of communication with $\mathbf{M_a}$, and

(b1-2) data obtained from a survey of wireless signal characteristics in an area including said geographical extent $\mathbf{G_a}$;

(b2) a second category of one or more location determining techniques, wherein each said technique of said second category determines a geographical extent $\mathbf{G_b}$ for a location of a mobile station ($\mathbf{M_b}$) as a result of (I) and (II) following:

(I) generating an association for associating: (i) each location **L** of a plurality of geographical locations with (ii) data indicative of corresponding measurements of wireless signals transmitted between some one of said mobile stations, different from $\mathbf{M_b}$, and the communication stations, wherein said some mobile station is approximately at the location **L**, and

(II) using said association together with characteristics of signals communicated between $\mathbf{M_b}$ and the communication stations for determining the geographical extent $\mathbf{G_b}$ for the location of $\mathbf{M_b}$;

(b3) a third category of one or more offset determining techniques, wherein each said offset determining technique determines a geographical extent $\mathbf{G_c}$ for a location of a mobile station ($\mathbf{M_c}$);

wherein said offset determining technique utilizes one or more timing measurements of wireless signals between the mobile station $\mathbf{M_c}$ and a plurality of the communication stations for determining the geographical extent $\mathbf{G_c}$;

wherein said timing measurements are a function of a signal time delay between the mobile station $\mathbf{M_c}$ and at least one communication station **CS** of the plurality of communication stations, and said timing measurements are for determining $\mathbf{G_c}$ as a function of at least: a location of **CS**, and a predetermined formula representative of a geometric curve for determining a horizontal position of $\mathbf{M_c}$;

wherein there is a corresponding portion of the signal timing measurements that are obtained during a plurality of wireless signal transmissions between the mobile station $\mathbf{M_c}$ and **CS**, with at least one of the transmissions being from the mobile station $\mathbf{M_c}$ to **CS**;

wherein said communication station **CS** is supported on the Earth; and

wherein each of said offset determining techniques determines a geographical extent for a location of each of a plurality of different mobile stations;

(b4) a fourth category of one or more direction of arrival location determining techniques wherein each said direction of arrival technique determines a geographical extent for a location of a mobile station ($\mathbf{M_d}$) by determining an angular orientation about a communication station $\mathbf{CS_d}$ of a direction of the mobile station $\mathbf{M_d}$ using a measurement of a wireless signal angle of arrival of wireless signals transmitted between the mobile station $\mathbf{M_d}$ and the communication station $\mathbf{CS_d}$;

(b5) a fifth category of one or more wireless location techniques wherein each said technique ($\mathbf{T_5}$) of said fifth category determines a geographical extent for a location of a mobile station ($\mathbf{M_e}$) using wireless signals received at the mobile station $\mathbf{M_e}$ from the non-terrestrial transmitting stations, wherein said wireless signals provide time values, and said technique $\mathbf{T_5}$ determines at least one elapsed time for signal transmissions to $\mathbf{M_e}$ for the wireless signals transmitted by one or more of the non-terrestrial transmitting stations;

(C) first obtaining first structured location data using said first instance;

(D) second obtaining second structured location data using said second instance, wherein said second location technique is included in at least said fifth category;

wherein each of said first and second structured location data includes a common data representation for a plurality of location attributes, said representation including (d1) through (d2) following:

(d1) a collection of one or more attributes, $\mathbf{A_1}$, for representing a geographical extent within which a mobile station being located is expected to be;

(d2) a collection of one or more attributes related to at least one of: an error in data for $\mathbf{A_1}$, and a likelihood of the mobile station being located being in the geographical extent represented by data for $\mathbf{A_1}$; and

(E) outputting, to a predetermined destination on a communications network, resulting location information of a location $\mathbf{L_M}$ of the mobile station **M**, said resulting location information being dependent upon data for said attributes (d1) and (d2) obtained from at least one of said first and second structured location data.

351. (Previously Presented) The method of Claim 350, wherein said plurality of location attributes further includes an attribute for a timestamp.

352. (Previously Presented) The method of Claim 350, wherein said plurality of location attributes further includes an attribute for descriptor information indicative of a reason that another one of said plurality of location attributes has its corresponding value.

353. (Previously Presented) The method of Claim 350, wherein said plurality of location attributes includes the attribute related to an error in data for $\mathbf{A_1}$.

354. (Previously Presented) The method of Claim 350, wherein said plurality of location attributes includes the attribute related to a likelihood of the mobile station being located being in the geographical extent represented by $\mathbf{A_1}$.

355. (Previously Presented) The method of Claim 350, wherein said step of providing and at least one of said steps (A) through (F) are performed at one of: a mobile base station, and a stationary site.

356. (Previously Presented) The method of Claim 350, wherein said first location technique is performed at a site remote from the mobile station **M**.

357. (Previously Presented) The method of Claim 350, further including performing said outputting step according to a frequency of output desired by the destination.

Claim 358 (cancelled)

359. (Currently Amended) The method of Claim 350, further including a step of receiving a request, via the Internet, for locating the mobile station **M**~~, wherein said request is related to a location of a vehicle via the Internet~~.

360. (Previously Presented) The method of Claim 350, wherein said step of first providing includes a step of requesting activation of said first resource via a communication on the Internet.

361. (Currently Amended) The method of Claim 85, wherein, for at least one occurrence of locating one of the mobile stations for being **M**, at least one of said first and second location related information is determined, and is determined using a location technique for determining a geographical indication (**L**) for a location of the mobile station **M**, wherein the location technique determines the location **L** by receiving data pairings obtained from geographical location information indicative of the location of the mobile station **M**, wherein the geographical location information includes [[to]] one or more geographically dependent wireless signal characteristics of a wireless communication between the mobile station **M**, and the communication stations;

wherein the location technique performs an interpolation dependent on ~~a plurality of~~ the data pairings, wherein each data pairing includes: (i) an identification of a transmitter location from which there is a wireless communication ~~with~~ between the mobile station **M**, and one of the communication stations, and (ii) wireless related information indicative of the transmitter's location, wherein the wireless related information is obtained from the ~~includes to one or more~~ geographically dependent wireless signal characteristics corresponding to [[of]] the wireless communication.

Claims 362 - 368 (cancelled)

369. (Currently Amended) The system of Claim 502 wherein for said instance $\mathbf{I_1}$ being available, $\mathbf{I_1}$ includes ~~one or more~~ first data ~~values~~ that ~~provide information~~ is descriptive of location processing performed for locating $\mathbf{M_0}$, and for said instance $\mathbf{I_2}$ being available, $\mathbf{I_2}$ includes ~~one or more~~ second data ~~values~~ that ~~provide information~~ is descriptive of location processing for locating $\mathbf{M_0}$[[;]]

~~wherein the at least some of said first data values and the at least some of said second data values have a common predetermined semantics for their interpretation~~.

370. (Previously Presented) The location system of Claim 106, wherein said mobile station **M** is different from at least one of the one or more mobile stations used for obtaining said wireless signal data of (a2).

Claims 371 - 372 (cancelled)

373. (Currently Amended) The method of Claim 121, including a further step of receiving by computational machinery, the instances $\mathbf{I_1}$ and $\mathbf{I_2}$ in a common predetermined data structural format.

374. (Currently Amended) The method of Claim 121, further including performing at least some of the following steps performed by computational machinery:

(i) activating at least one common predetermined mobile station location related component of a computational machine for determining each of said resulting location estimates, wherein the location related component is not activated for locating the mobile station until after at least one of said instances $\mathbf{I_1}$ and $\mathbf{I_2}$ is obtained;

(ii) ~~providing information for activating the first and second location techniques, wherein said information for activating is output by a predetermined common activation component that routes said information for activating to the first and second location techniques;~~

~~(iii)~~ said step of determining includes, for the instances $\mathbf{I_1}$ and $\mathbf{I_2}$, accessing respective portions provided in predetermined common data structural format that specifies a data format for location related attributes of said instances $\mathbf{I_1}$ and $\mathbf{I_2}$, wherein at least some of the location related attributes do not identify a geographical location of the mobile station; and

([[iv]]iii) said step of determining includes, for at least one of said resulting location estimates, obtaining an attribute indicative of one or more of: an error in a geographical extent for locating the mobile station, an accuracy in a geographical extent for locating the mobile station, and a likelihood of the mobile station being located in the at least one resulting estimate.

375. (Previously Presented) The method of Claim 121, wherein said step of receiving includes receiving descriptor information providing information related to the processing performed for determining one or more of said instances $\mathbf{I_1}$ and $\mathbf{I_2}$.

Claims 376 - 380 (cancelled)

381. (Previously Presented) The method of Claim 350, wherein said location $\mathbf{L_1}$ and said location $\mathbf{L_2}$ are substantially identical.

382. (Previously Presented) The method of Claim 350, wherein said location $\mathbf{L_1}$ and said location $\mathbf{L_2}$ are effectively different locations of the mobile station **M**.

Claim 383 (cancelled)

384. (Previously Presented) The method of Claim 350, wherein said location $\mathbf{L_M}$ is effectively one of said location $\mathbf{L_1}$, and said location $\mathbf{L_2}$.

385. (Previously Presented) The method of Claim 384, wherein said location $\mathbf{L_M}$ is effectively identical to each of said location $\mathbf{L_1}$ and said location $\mathbf{L_2}$.

386. (Previously Presented) The method of Claim 350, wherein said location $\mathbf{L_M}$ is a location of the mobile station **M** for a time subsequent to a time for the mobile station **M** being at one or more of said location $\mathbf{L_1}$ and said location $\mathbf{L_2}$.

Claims 387 - 396 (cancelled)

397. (Currently Amended) The method of Claim 128, wherein said step of outputting includes preferring one of said first and second location information over the other;

wherein when both of the first and second location information are available, the step of preferring includes one of: (i) filtering or discarding a non-preferred one of the first and second location information, and (ii) reducing an importance of the non-preferred one of the first and second location information.

398. (Previously Presented) The method of Claim 128, wherein said step of outputting includes combining said first and second location information when both are available for locating the mobile station at substantially a same time.

Claim 399 (cancelled)

400. (Currently Amended) The method of Claim 97, wherein the resulting information includes a location estimate for **M** that is obtained that is a result of a combination of at least two of the geographic estimations ~~location estimates~~ of the first collection, the at least two location estimates obtained from different ones of the first, second and third techniques.

401. (Previously Presented) The method of Claim 159, wherein for locating said mobile station **M**, said step of generating is dependent upon an output from the corresponding instance of the first technique (B1), and the range between the mobile station **M** and the communication station $\mathbf{CS_M}$ is determined at a site different from the unknown location of the mobile station **M**.

Claims 402 - 409 (cancelled)

410. (Currently Amended) The method of Claim 374, further including at least said step (ii[[i]]).

Claim 411 (cancelled)

412. (Currently Amended) A method for locating a plurality of wireless mobile stations using wireless signals, wherein each of a plurality of terrestrial stations is available for at least wirelessly detecting wireless transmissions from the mobile stations;

wherein there are first and second mobile station location techniques, wherein each of said location techniques is capable of providing a location estimate for each mobile station of at least some of said mobile stations when the location technique is supplied with corresponding data obtained from wireless signal measurements indicative of the mobile station's location;

wherein (a) and (b) following:

(a) the first location technique determines first location related information for each mobile station ($\mathbf{M_a}$) of some of the plurality of mobile stations, using values that are indicative of a signal time delay between the mobile station $\mathbf{M_a}$ and one or more of the terrestrial stations, wherein two way signal communication between $\mathbf{M_a}$ and at least one of the one or more of the terrestrial stations is established for obtaining the signal time delay,

wherein the first location technique determines the first location related information by determining a geographical extent, or location, common to a plurality of loci of locations, each locus determined using locations satisfying one or more predetermined location equations, each of the equations dependent upon the values for offsetting a corresponding one of the loci from at least one of the terrestrial stations, and

(b) the second location technique determines second location related information, for each mobile station ($\mathbf{M_b}$) of some of the plurality of mobile stations, using a geographical extent obtained from a conversion of data indicative of transmission times for wireless signals: transmitted from a plurality of non-terrestrial transmitting stations above and not supported on the Earth's surface, and received by $\mathbf{M_b}$, or another of the plurality of mobile stations,

comprising the following steps performed by computational machinery:

first receiving, at a node of a network, an instance ($\mathbf{I_1}$) of the first location related information as an output by an implementation of the first location technique by computational machinery, the instance $\mathbf{I_1}$ including a first estimate of a location for a first of the mobile stations at a time ($\mathbf{T_1}$) and at an actual location ($\mathbf{L_1}$), wherein the first mobile station is an instance of $\mathbf{M_a}$;

wherein the first estimate is not dependent upon a geographical extent obtained from any conversion of data indicative of transmission times for wireless signals transmitted from a plurality of non-terrestrial transmitting stations above and not supported on the Earth's surface;

second receiving at the node, an instance ($\mathbf{I_2}$) of the second location related information as an output by an implementation of the second location technique by computational machinery, the instance $\mathbf{I_2}$ including a second estimate of a location for a second of the mobile stations at a time ($\mathbf{T_2}$) and at an actual location ($\mathbf{L_2}$), wherein the second mobile station is an instance of $\mathbf{M_b}$;

wherein the implementation of the second location technique also uses data indicative of a range of the second mobile station relative to one of the terrestrial stations for determining the second estimate;

performing after receipt by [[at]] the node of ~~, for each~~ the instance[[s]] $\mathbf{I_1}$ and after receipt by the node of the instance $\mathbf{I_2}$, at least one corresponding computation, by computational machinery, that is dependent on a geographical location of a corresponding one of the first and second mobile stations;

first transmitting, to a first predetermined destination of the network, first resulting information for locating the first mobile station, wherein the first resulting information is obtained using the instance $\mathbf{I_1}$ of said first location related information; and

second transmitting, to a second predetermined destination of the network, second resulting information for locating the second mobile station, wherein the second resulting information is obtained using the instance $\mathbf{I_2}$ of said second location related information.

413. (Previously Presented) The method of Claim 412, wherein for the second mobile station, the implementation of the second location technique is improved by the data indicative of a range of the second mobile station from the one terrestrial station, and the one terrestrial station is stationary.

414. (Previously Presented) The method of Claim 412, wherein the first and second receiving steps receive each of the instances $\mathbf{I_1}$ and $\mathbf{I_2}$ in a common predetermined location related data format, wherein for a mobile station (**M**) being located, the format includes the following fields:

(a) a geographical location estimate of **M**;

(b) a timestamp; and

(c) a measurement indicative of the likelihood of **M** being in the geographical location estimate.

415. (Previously Presented) The method of Claim 414, wherein the common predetermined location related data format includes a descriptor from a source of the geographical location estimate, wherein the descriptor includes information descriptive of a reason or process performed at the source.

416. (Currently Amended) The method of Claim 412, wherein for the implementation of the first technique, at least one of the loci is determined at a location different from that of the first mobile station, and

wherein for the implementation of the second technique, the range of the second mobile station is determined using a wireless signal time difference of arrival from the plurality of non-terrestrial transmitting stations.

417. (Previously Presented) The method of Claim 412, wherein said first and second mobile stations are different.

418. (Currently Amended) The method of Claim 417, further including a step of ~~receiving~~ obtaining another ~~additional~~ location estimate of one of the first and second mobile stations, and further including a step of

determining, by computational machinery, a corresponding one of the first resulting information and the second resulting information using a preference for one of (i) and (ii) following: (i) a corresponding one of the first estimate and the second estimate, and (ii) the another ~~additional~~ location estimate for the corresponding one of the first and second mobile stations.

419. (Previously Presented) The method of Claim 412, wherein said locations $\mathbf{L_1}$ and $\mathbf{L_2}$ are different, and the first and second mobile stations are a same one of the mobile stations.

420. (Previously Presented) The method of Claim 412, wherein said first and second mobile stations are the same.

421. (Previously Presented) The method of Claim 420, wherein each of the first and second estimates is substantially unaffected by the other.

422. (Previously Presented) The method of Claim 412, wherein said times $\mathbf{T_1}$ and $\mathbf{T_2}$ are different.

Claims 423 - 424 (cancelled)

425. (Previously Presented) The method of Claim 412, further including a step of requesting at least one of the instances $\mathbf{I_1}$ and $\mathbf{I_2}$ via a transmission on the network.

426. (Previously Presented) The method of Claim 412, wherein the first and second transmitting steps are from the node.

Claim 427 (cancelled)

428. (Previously Presented) The method of Claim 412, wherein the performing step includes determining the first or second predetermined destination as a destination (**DST**) on the network, the destination **DST** being dependent on a geographical location of a corresponding one of the first and second mobile stations.

Claim 429 (cancelled)

430. (Previously Presented) The method of Claim 412, further including a step of:

third receiving at the node, additional location related information for locating an additional one of the mobile stations, the additional location related information not dependent upon a signal time delay.

Claim 431 (cancelled)

432. (Previously Presented) The method of Claim 412, wherein at least one of said first and second resulting information includes a timestamp indicative of when said at least one resulting location information is applicable to a corresponding one of the locations $\mathbf{L_1}$ and $\mathbf{L_2}$, and a confidence value indicative of a probability that the corresponding one of the locations $\mathbf{L_1}$ and $\mathbf{L_2}$ is represented by the at least one resulting location information.

Claim 433 (cancelled)

434. (Currently Amended) The method of Claim 412 further including a step of providing for at least one of said first and second resulting information, a presentation for presenting on a visual display, wherein said presentation includes information related to a corresponding mobile station location accuracy or reliability of one of said first and second mobile stations, the step of providing performed by computational machinery.

435. (Currently Amended) The method of Claim 412, further including the steps of:

determining, by computational machinery, a location estimate of one of the first and second mobile stations, said location estimate obtained as a function of a position of a known geographical feature different from the terrestrial stations; and

providing the location estimate as part of a corresponding one of the first and second resulting information for the one mobile station.

Claim 436 (cancelled)

437. (Previously Presented) The method of Claim 412 further including for the second resulting information, presentation information, wherein said presentation information is determined according to an expected accuracy of said second resulting information.

438. (Currently Amended) The method of Claim 412, further including the steps of:

obtaining ~~receiving~~ an additional location estimate of the first mobile station after receiving the instance $\mathbf{I_1}$, wherein the additional location estimate is determined by computational machinery performing a different location technique from the first technique~~; and~~

~~obtaining for the additional location estimate, additional resulting information for transmitting to the first predetermined destination, wherein the additional resulting information includes presentation information for indicating a change in location accuracy from the first resulting information~~.

439. (Currently Amended) The method of Claim 412, further including a step of obtaining, by computational machinery, ~~receiving~~ a resulting location for at least one mobile station (**M**), different from~~, or one of,~~ the first and second mobile stations, wherein the resulting location is obtained from a performance of an implementation of a third location technique for determining ~~mobile station~~ resulting location[[s]], wherein (1) through (3) following hold:

(1) the implementation of the third technique is performed by computational machinery, and is dependent upon signal data, wherein the signal data is obtained from wireless signals communicated between the mobile station **M** and the plurality of terrestrial stations;

(2) the implementation of the third technique is dependent upon (2-i) and (2-ii) following: (2-i) a representation of each of a plurality of geographical locations, and (2-ii) for each of the geographical locations, L, corresponding wireless signal information previously obtained using transmissions between some mobile station, different from **M**, and the plurality of terrestrial stations, when the some mobile station transmits from approximately the geographical location, L, and

(3) the implementation of the third technique uses the signal data for determining one or more likely location estimates for **M** by identifying a similarity in a pattern between (3-i) and (3-ii) following: (3-i) one or more wireless signal characteristics of the signal data, and (3-ii) the information of (2-ii) for a collection of one or more of the plurality of geographical locations.

440. (Previously Presented) The method of Claim 412, further including a step of providing a network transmission for modifying at least one installed implementation of the first location technique at a remote site.

441. (Currently Amended) The method of Claim 412, further including at least some of the following steps performed by computational machinery:

(i) activating at least one common predetermined mobile station location related component for determining each of the first and second resulting information, wherein the location related component is not activated for locating a corresponding one of the first and second mobile stations until after at least one of said instances $\mathbf{I_1}$ and $\mathbf{I_2}$ is obtained;

(ii) providing information for activating the implementations of the first and second location techniques, wherein said information for activating is output by a predetermined common activation component that routes said information for activating to the implementations of the first and second location techniques;

(iii) for the instances $\mathbf{I_1}$ and $\mathbf{I_2}$, a ~~further~~ step of accessing at least a portion of a predetermined common data structure that specifies at least most location related attributes of said instances $\mathbf{I_1}$ and $\mathbf{I_2}$, wherein the location related attributes do not identify a geographical location; and

(iv) for at least one of said first and second resulting information, a ~~further~~ step of obtaining an attribute indicative of each of: (a) an error or accuracy in a geographical extent for locating a corresponding one of the first and second mobile stations, and (b) data indicative of a likelihood of the corresponding one of the first and second mobile stations being located by a location estimate of the at least one of the first and second resulting information.

442. (Previously Presented) The method of Claim 179, wherein for at least one location (**L**) of the mobile station, a corresponding location estimate is received, wherein the corresponding location estimate is dependent

upon an instance of the wireless timing signals of (a), and is dependent upon an instance of time delays of wireless signals of (b).

443. (Previously Presented) The method of Claim 179, wherein the data for the graphical presentation includes information for displaying an indication related to an accuracy of one or more locations of the mobile station.

444. (Previously Presented) The method of Claim 179, wherein the step of obtaining includes receiving from a location estimator an instance ($\mathbf{I_1}$) of the location related information, wherein the location estimator uses the wireless timing signals for determining a spatial relationship between the mobile station and each of the satellites.

445. (Previously Presented) The method of Claim 444, wherein the instance $\mathbf{I_1}$ is determined using additional data for improving on location information of the wireless timing signals of (a), wherein said additional data is received by the mobile station in a wireless communication between: the mobile station, and one of terrestrial transceivers.

446. (Previously Presented) The method of Claim 444, wherein the step of obtaining includes receiving from a location estimator an instance ($\mathbf{I_2}$) of the location related information, wherein the instance $\mathbf{I_2}$ is obtained from the time delays of the wireless signals of (b), wherein a time difference of arrival of the wireless signals between the mobile station and some of the transceivers is determined.

Claim 447 (cancelled).

448. (Currently Amended) The method of Claim 140, further including the computational machinery performing a step of preferring information for the first location estimate over information for the second location estimate.

449. (Currently Amended) The method of Claim 121 further including one or more of (a) and (b) following performed by the computational machinery:

(a) a step of modifying a confidence for the at least said resulting location estimate obtained from using the instance $\mathbf{I_2}$, wherein a modified confidence is obtained that depends upon a consistency with a previous location estimate along a known route; and

(b) a step of comparing data of said at least one resulting location estimate obtained from using the instance $\mathbf{I_2}$,with a second data of a different location estimate; and a step of modifying a confidence of said resulting location estimate obtained from using the instance $\mathbf{I_2}$, depending upon a consistency between the data of said resulting location estimate obtained from using the instance $\mathbf{I_2}$, and the second data.

450. (Currently Amended) The method of Claim 119, wherein for locating the mobile station $\mathbf{M_1}$ at a location L, the second mobile station location estimator ~~activates or receives an~~ outputs the second information from computational machinery performing a coverage area analysis technique for locating the mobile station $\mathbf{M_1}$ when supplied with data obtained from wireless signal measurements communicated between the mobile station $\mathbf{M_1}$ and one or more of said plurality of the communication stations, and the second information is given a preference for use in determining the resulting location estimate when an instance of the first information for L is not available or is unsatisfactory.

451. (Currently Amended) The method of Claim 119, wherein the second mobile station location estimator activates or receives an output from a technique for locating the mobile station $\mathbf{M_1}$, when supplied with second data obtained from wireless signal measurements communicated between the mobile station $\mathbf{M_1}$, and one or more of said plurality of communication stations, said second technique determines a correspondence between (1) and (2) following: (1) at least one [[a]] first value derived from said second data, and (2) wireless survey data (**D**) wherein **D** is obtained using second values, wherein each second value is derived from mobile station wireless signal measurements at a known geographical location.

452. (Previously Presented) The method of Claim 119, wherein the second mobile station location estimator activates or receives an output from a locus computing technique for locating the mobile station $\mathbf{M_1}$, when supplied with second data obtained from wireless signal measurements communicated between the mobile station $\mathbf{M_1}$, and two or more of said plurality of communication stations, wherein the locus computing technique utilizes measurements (**S**) of wireless signals from the second data for determining at least one locus of locations for the mobile station $\mathbf{M_1}$,

wherein at least one of said measurements **S** is obtained using a signal time delay between the mobile station $\mathbf{M_1}$, and at least one of the two or more communication stations; wherein there is two way wireless communication between mobile station $\mathbf{M_1}$ and at least one of the communication stations.

453. (Previously Presented) The method of Claim 119, wherein the second mobile station location estimator activates or receives an output from a direction of arrival technique for locating the mobile station $\mathbf{M_1}$, when supplied with second data obtained from wireless signal measurements communicated between the mobile station $\mathbf{M_1}$ and one of said communication stations (**CS**), wherein the direction of arrival technique determines a location estimate of the mobile station $\mathbf{M_1}$ using, from the second data, a direction from which wireless signals arrive at **CS** from the mobile station $\mathbf{M_1}$.

454. (Currently Amended) A method for locating each mobile station (**M**) of a plurality of terrestrial mobile stations, wherein there are wireless signal transmissions between each of the mobile stations **M** and a plurality of fixed location communication stations supported on the Earth, wherein each of the communications stations is operable for two way wireless communication with each of the mobile stations **M**, comprising the following steps performed by computational machinery:

(1) providing access to first and second mobile station location evaluators implemented on computational machinery, wherein said location evaluators are able to determine information related to one or more location estimates of the mobile station **M** when the location evaluators are supplied with data obtained from wireless signal measurements indicative of a location of **M**;

wherein (A) and (B) following hold:

(A) said first location evaluator determines first geographical location related information for **M** using first data indicative of a delay time of a signal from at least one satellite to **M** for determining a spatial range between **M** and the at least one satellite;

(B) said second location evaluator determines second geographical location related information by performing one or more of the techniques (i) and (ii) following when the second location evaluator is supplied with a corresponding instance of said data for performing the one or more techniques;

the ~~above-cited~~ techniques are:

(i) a first technique for determining a location of the mobile station **M**, wherein a corresponding one of the instances includes a collection of measurements of wireless signals between the mobile station **M** and at least one of the communication stations, wherein the one instance is used by the first technique to determine a geographic estimation for the mobile station **M** relative to the at least one communication station, wherein two way communication between the mobile station **M** and one of the communication stations is established for obtaining the collection of measurements; and

(ii) a second technique for determining a ~~particular~~ location, **L**, of the mobile station **M** by determining a correspondence between:

(a) wireless signal characteristics for wireless signals communicated between the mobile station **M** and a multiplicity of the communication stations, and

(b) a geographic location estimate for the ~~particular~~ location, **L**, wherein the geographic location estimate is dependent upon a similarity between the wireless signal characteristics, and previously obtained wireless signal characteristics for wireless communication between each of a plurality of mobile station locations, and the communication stations;

(2) first obtaining an instance of the first geographical location related information when provided by the first location evaluator;

(3) second obtaining an instance of the second geographical location related information when provided by the second location evaluator; and

(4) determining resulting location information of the mobile station **M** dependent upon at least one of: (a) a first value obtained from the instance of the first geographical location related information, and (b) a second value obtained from the instance of the second geographical location related information, wherein data indicative of a likelihood of the mobile station **M** being at a location represented by said resulting location information is determined.

455. (Currently Amended) The method of Claim 454, wherein for determining the resulting location information of one of the mobile stations for **M** at a location L, a corresponding instance of the first geographical location related information for the one mobile station ~~**M from the first evaluator**~~ is given preference over a corresponding instance of the second geographical location related information for the one mobile station ~~locating at least some of the terrestrial mobile stations **M**~~.

456. (Currently Amended) The method of Claim 454, wherein for determining the resulting location information, one of the mobile stations for **M** at a location L, a corresponding instance of the second geographical location related information for the one mobile station is given preference over a corresponding instance of the first geographical location related information for the one mobile station ~~a geographical location for **M** from the second evaluator is given preference for location at least one of the terrestrial mobile stations **M**~~.

457. (Currently Amended) The method of Claim 454, wherein the first geographical location related information for **M** ~~from the first evaluator~~, and the second geographical location related information for **M** from the second evaluator are used in determining the resulting location information.

458. (Previously Presented) The method of Claim 454, wherein the step of determining includes:

substantially discarding the instance of the first geographical location related information for **M**; and

subsequently determining a geographical location for **M** for inclusion in the resulting location information using the second value.

459. (Previously Presented) The method of Claim 454, wherein the second location evaluator performs the second technique.

460. (Currently Amended) The method of Claim [[461]] 454, wherein the second location evaluator performs a pattern matching operation between the wireless signal characteristics, and the previously obtained wireless signal characteristics for wireless communication between each of a plurality of mobile station locations, and the communication stations.

461. (Currently Amended) A method for locating a terrestrial mobile station, wherein said method uses wireless signal measurements obtained from transmissions between said mobile station and a network having a

plurality of communication stations supported on the Earth, wherein each of said communication stations includes one or more of a transmitter and a receiver for wirelessly communicating with said mobile station,

wherein there are first and second mobile station location techniques for outputting mobile station location related response information when said location techniques are supplied with corresponding wireless signal related data;

wherein said first location technique estimates a location of the mobile station using values[[,]] obtained from wireless signals received at the mobile station from one or more satellites, wherein the values are indicative of signal time delay from the satellites to the mobile station; and

wherein said second location technique estimates a location of the mobile station by using one or more measurements for a wireless signal between the mobile station and at least one of the communication stations, **CS**, for determining a geographical extent for the mobile station, the one or more measurements dependent upon a location of the at least one communication station **CS**;

wherein there is two way wireless communication between the mobile station and the network in order to obtain the one or more measurements for the second location technique;

comprising performing the following steps by computational machinery:

first obtaining, from said first location technique, first location related response information for a location of the mobile station;

second obtaining, from said second location technique, second location related response information for a location of the mobile station; and

determining resulting location information of the mobile station using at least one of: a first value obtained from said first location related response information, and a second value obtained from said second location related response information, wherein data indicative of a likelihood of the mobile station being at a location represented by said resulting location information is obtained using one of the first location related response information and the second location related response information.

462. (Currently Amended) The method of Claim 461, wherein the second obtaining step includes obtaining the second location related response information from an instance of the second technique wherein the measurements are indicative of an angle of arrival of a wireless signal at the communication station, **CS**, and from the mobile station.

463. (Currently Amended) The method of Claim 461, wherein the second obtaining step includes obtaining the second location related response information from an instance of the second technique that determines a location of said mobile station by using a statistical correlation for correlating (a) and (b) following:

(a) the one or more measurements; and

(b) data, **D**, wherein for each location L of a plurality of locations, said data **D** includes one or more wireless signal measurements related to a wireless communication between some mobile station that is substantially at **L**, and at least one of the communication stations;

wherein said correlation is used for determining a likely geographical estimate, **GR**, for a location for the mobile station and data indicative of a probability that the mobile station is within the likely geographical estimate **GR**.

464. (Currently Amended) The method of Claim 461, wherein for at least one location of the mobile station~~, the step of determining includes~~:

the step of first obtaining includes ~~a step of~~ obtaining ~~first data indicative of a dependence of the resulting location information on~~ the first location related response information for a first location of the mobile station;

[[and]]

the step of second obtaining includes obtaining the second location related response information for a second location of the mobile station different from the first location;

the step of determining includes preferring a less recent one of the first location related response information and the second location related response information when the other of the first location related response information and the second location related response information indicates an unsatisfactory result for location determination ~~subsequently using the first data and the second value for obtaining a geographical location estimate of the at least one location, the geographical location estimate included in the resulting location information~~.

465. (Currently Amended) The method of Claim 464, wherein for determining the resulting location information, the step of determining includes discarding the first location related response information; and ~~then obtaining the geographical location estimate~~ using the second location related response information.

466. (Currently Amended) The method of Claim 461, wherein for at least one location of the mobile station, the step of determining includes:

the step of first obtaining includes obtaining the first location related response information for a first location of the mobile station;

the step of second obtaining includes ~~a step of~~ obtaining ~~second data indicative of a dependence of the resulting location information on~~ the second location related response information for a second location of the mobile station different from the first location; and

the step of determining includes using to a more recent one of the first location related response information and the second location related response information when the more recent one is determined to be more indicative of a current location of the mobile station than the other of the first location related response information and the second location related response information ~~subsequently using the second data and the first value for obtaining a geographical location estimate of the at least one location, the geographical location estimate included in the resulting location information~~.

467. (Currently Amended) The method of Claim 466, wherein for determining the resulting location information, the step of determining includes discarding the second location related response information; and then ~~obtaining the geographical location estimate~~ using the first location related response information.

468. (Currently Amended) A method for locating a plurality of terrestrial mobile stations using wireless signal measurements obtained from transmissions between the mobile stations and a network having a plurality of terrestrial communication stations, wherein each of said communication stations includes a transmitter and a receiver for wireless two way communications with the mobile stations; and

wherein one or more mobile station location estimators are accessible such that as a result of the location estimators being supplied with corresponding input for locating any one of the mobile stations (**M**), each of the location estimators performs at least one of the following techniques:

(i) a first technique for determining first location information for locating the mobile station **M**, the first location information including a location determined using signal time delay related data for a signal transmitted from at least one non-terrestrial wireless communication station that is above and not supported on the Earth's surface, the signal received at the mobile station **M**; and

(ii) a second technique for determining second location information for locating the mobile station **M**, the second location information determined using input data obtained from time delay data for wireless signal communication between the mobile station **M**, and at least one of the terrestrial communication stations $\mathbf{CS_1}$, and

wherein there is two way wireless communication between the mobile station **M** and the network for obtaining the input data;

comprising performing the following steps by computational machinery:

receiving location requests for locating the mobile stations;

issuing, in response to the location requests, corresponding requests for information related to locations of the mobile stations, the corresponding requests for requesting activation of at least one of the location estimators;

obtaining, for a corresponding location of each mobile station ($\mathbf{M_i}$) requested to be located, at least one of: a corresponding instance of the first location information for $\mathbf{M_i}$ from computational machinery performing the first technique, and a corresponding instance of the second location information for $\mathbf{M_i}$ from computational machinery performing the second technique;

transmitting, to a site on a network, a location estimate of $\mathbf{M_i}$ dependent upon the at least one of the corresponding instance of the first location information for $\mathbf{M_i}$, and a corresponding instance of the second location information, wherein the site accesses location estimate of $\mathbf{M_i}$ for a predetermined purpose;

wherein information related to a correctness of the location estimate of $\mathbf{M_i}$ is also obtained for transmission in the transmitting step;

wherein for each of some of the mobile stations requested to be located, the corresponding instance of the first location information therefor is given a preference in obtaining the corresponding location estimate for transmission in the transmitting step; and

wherein for each of some of the mobile stations, their corresponding information related to a correctness is dependent upon their corresponding instances of the second location information.

469. (Previously Presented) The method of Claim 468, wherein for at least one of the mobile stations requested to be located, the information related to a correctness includes a value indicative of a likelihood of the at least one mobile station being identified by the location estimate for the at least one mobile station.

470. (Currently Amended) The method of Claim 468, wherein for at least one of the mobile stations requested to be located, the information related to a correctness includes data indicative of an extent ~~having~~ of the location estimate for the at least one mobile station ~~therein~~.

471. (Previously Presented) The method of Claim 468, wherein for at least one of the mobile stations requested to be located, the location estimate therefor is dependent upon the corresponding instance of the first location information, and the corresponding instance of the second location information.

472. (Currently Amended) The method of Claim 468, further including, for at least one of the mobile stations requested to be located, providing the preference to the corresponding instance of the first location information over the corresponding instance of the second location information, when the corresponding instance of the second location information is also obtained for the at least one mobile station.

473. (Previously Presented) The method of Claim 468, wherein the information related to a correctness includes an accuracy of the location estimate.

474. (Currently Amended) The method of Claim 468, wherein the step of obtaining includes ~~further including~~:

receiving, for at least first and second of the mobile stations, their corresponding instances of the first location information at a predetermined site;

wherein for the first mobile station, the received corresponding instance of the first location information is used in determining [[a]] the corresponding location estimate of the first mobile station;

receiving for at least the second mobile station, a corresponding instance of the second location information; and

wherein for the second mobile station, the received corresponding instance of the second location information is used in determining [[a]] the corresponding location estimate of the second mobile station, wherein the second mobile station is included in the some mobile stations having their information related to a correctness dependent upon their corresponding instances of the second location information.

475. (Previously Presented) The method of Claim 468, wherein for at least one of the mobile stations requested to be located, a location $\mathbf{L_1}$ of the at least one mobile is estimated using a location estimate obtained from the corresponding instance of the first location information for the at least one mobile station, and at a different location $\mathbf{L_2}$ of the at least one mobile, $\mathbf{L_2}$ is estimated using a location estimate obtained from the corresponding instance of the second location information for the at least one mobile station.

476. (Currently Amended) The method of Claim 475, wherein for locating the at least one mobile station at the location, $\mathbf{L_2}$, the corresponding instance of the second location information for the at least one mobile station is given a preference over a corresponding instance of the first location information for locating the at least mobile station at $\mathbf{L_2}$.

477. (Previously Presented) The method of Claim 468, wherein for at least one of the mobile stations requested to be located, the information related to a correctness includes data for a confidence that the one mobile station is located by the location estimate for the one mobile station.

478. (Previously Presented) The method of Claim 468, wherein for at least one of the mobile stations, the information related to a correctness includes data for an error measurement related to the one mobile station being located by the location estimate for the one mobile station.

479. (Currently Amended) The method of Claim 468, wherein for at least one of the mobile stations, ~~wherein~~ the transmitting step transmits the information related to the correctness together with the location estimate for the at least one mobile station for graphically presenting [[of]] each of the information related to the correctness and the location estimate on a common map.

480. (Currently Amended) The method of Claim 468, further including, for at least one of the mobile stations, performing by computational machinery a step of combining the corresponding instance of the first location information and the corresponding instance of the second location information for obtaining the location estimate of the at least one mobile station.

481. (Currently Amended) The method of Claim 468, wherein for a first of the mobile stations, a performance of the second technique by computational machinery includes a performance of one or more of:

(i) a third technique for determining, as a result, at least one location estimate or locus for said first mobile station by using an instance of said corresponding input having timing measurements indicative of one of: a time of arrival of wireless signals, and a time difference of arrival of wireless signals between the first mobile station and at least one of the communication stations $\mathbf{CS_1}$ for determining a range of the first mobile station from $\mathbf{CS_1}$, said range varying with varying

values of the timing measurements, wherein the signals for obtaining the timing measurements are communicated during wireless signal transmissions between the first mobile station and $\mathbf{CS_1}$, ~~with at least one of the transmissions being from the first mobile station to $\mathbf{CS_1}$, and~~ wherein said ~~first~~ third technique outputs the result from a site different from the location of the first mobile station;

(ii) a fourth technique for determining one or more candidate locations of the first mobile station, wherein each of said candidate locations is determined using, for at least some one of the communication stations $\mathbf{CS_2}$, an instance of said corresponding input for a wireless signal direction of arrival that is an angular orientation about the communication station $\mathbf{CS_2}$ of a direction of the first mobile station determined using a measurement of a wireless signal angle of arrival of wireless signals transmitted between the first mobile station and the communication station $\mathbf{CS_2}$;

~~wherein for at least one occurrence when both said first and fourth techniques are used for locating the first mobile station at substantially a same location **L**, (1) and (2) following:~~

~~(1) at least one of said candidate locations is substantially unaffected by each said result obtained from every instance of said first technique performed by said location estimators for locating the first mobile station substantially at **L**, and~~

~~(2) at least one result from an instance of said first technique is substantially unaffected by each of said candidate locations for locating the first mobile station substantially at **L**.~~

482. (Currently Amended) The method of Claim 468, wherein for a first of the mobile stations, a performance of the first technique by computational machinery includes a performance of a technique for determining location information for said first mobile station, using timing values from an instance, $\mathbf{I_S}$, of said corresponding input for the first technique obtained from satellite signals received at the first mobile station from a plurality of satellites, and wherein said instance $\mathbf{I_S}$ also includes additional data for use by the technique for improving on location information for the first mobile station obtained from said satellite signals, wherein said additional data is received by the first mobile station in a wireless communication between: said first mobile station, and a communication station of a collection of one or more of the plurality of terrestrial communication stations;

wherein each communication station of said collection is one of: (A) a fixed location base station of a commercial mobile radio service provider, and (B) operable for providing a wireless communication for responding to a telephony emergency call placed with the commercial mobile radio service provider.

483. (Currently Amended) The method of Claim 468, wherein for a first of the mobile stations, a performance of the second technique by computational machinery includes a performance of a technique, wherein said technique determines a location estimate from a pattern of wireless signal characteristics between: (a) one or more of the communication stations, and (b) said first mobile station;

wherein said technique performs (c) and (d) following:

(c) accessing information obtained via an association that associates, for each geographical location (**L**) of a plurality of geographical locations, (c1) and (c2) following:

(c1) a representation of the geographical location **L**, and

(c2) for the geographical location **L**, corresponding signal information indicative of at least one characteristic of a signal **S** previously transmitted between some mobile station, $\mathbf{M_L}$, and one or more of the communication stations, when the some mobile station $\mathbf{M_L}$ transmitted **S** from approximately the geographical location **L**;

wherein for at least most of said geographical locations **L**, $\mathbf{M_L}$ is different from the first mobile station;

(d) determining one or more likely location estimates for the first mobile station from a similarity between (d1) and (d2) following:

(d1) data for one or more signal characteristics determined from wireless signals communicated between the first mobile station and the communication stations, wherein said signal characteristics include at least a first measurement of a non-line of sight signal transmission between the first mobile station and one of the communication stations, and

(d2) a portion of the accessed information that is indicative of the signal information of (c2).

484. (Currently Amended) A mobile station location system for a network having plurality of terrestrially based stationary location communication stations for wirelessly communicating with a multiplicity of mobile stations, comprising:

a network node for receiving a plurality of network requests for location indicative data of a plurality of the mobile stations;

computational equipment including (1) and (2) following:

(1) a selection component ~~process~~, wherein in response to the requests received by the network node, and for each mobile station ($\mathbf{M_n}$) of the plurality of mobile stations, the selection component ~~process~~ selectively communicates with each of one or more computational machine location providing sources for providing location information for $\mathbf{M_n}$ to ~~a predetermined interface of~~ the network node;

(A) wherein for a corresponding location for each mobile station ($\mathbf{M_i}$) of some of the plurality of mobile stations, (a-1) and (a-2) occur:

(a-1) the ~~predetermined interface~~ network node receives the location information for $\mathbf{M_i}$ provided by a first of the location providing sources, wherein the first location providing source determines the location information for $\mathbf{M_i}$ [[by]] using a conversion of signal timing data to a geographical extent of $\mathbf{M_i}$, wherein the signal timing data includes: for each of a plurality of transmitting stations, located above and not supported on the Earth's surface, an elapsed time of one or more wireless

signals transmitted from the transmitting stations, and received by the mobile station $\mathbf{M_i}$; and

(a-2) the corresponding location indicative data for the mobile station $\mathbf{M_i}$ is obtained using the location information for $\mathbf{M_i}$;

(B) wherein for a corresponding location for each mobile station ($\mathbf{M_k}$) of some of the plurality of mobile stations, (b-1) and (b-2) occur:

(b-1) the network node receives the location information for $\mathbf{M_k}$ provided by one of the location providing sources, the location information for $\mathbf{M_k}$ dependent upon information indicative of a location of at least one corresponding communication station ($\mathbf{CS_k}$) of the communication stations in two way wireless communication with $\mathbf{M_k}$; and

(b-2) the corresponding location indicative data for the mobile station $\mathbf{M_k}$ is obtained using the location information for $\mathbf{M_k}$ received by the network node;

(C) wherein for at least one mobile station ($\mathbf{M_p}$) of the mobile stations $\mathbf{M_k}$ and the corresponding location for $\mathbf{M_p}$ according to (B) above, the location indicative data for $\mathbf{M_p}$ ~~therefor~~ is not obtained using geographic data indicative of a spatial range between the mobile station $\mathbf{M_p}$ and one or more transmitting stations above and not supported on the Earth's surface, wherein the geographic data would have to be determined using signals received at the mobile station $\mathbf{M_p}$ from the one or more transmitting stations;

(2) a destination determination component ~~process~~, wherein for each of the mobile stations $\mathbf{M_n}$, the destination determination component ~~process~~ selectively determines a corresponding network destination for the location indicative data for $\mathbf{M_n}$ to be output by the network node[[,]];

wherein the network destination accesses the location indicative data for $\mathbf{M_n}$ in performing a location based service related to a corresponding one of the requests for the location indicative data for $\mathbf{M_n}$ received by the network node.

485. (Currently Amended) The system of Claim 484, wherein for at least one mobile station ($\mathbf{M_j}$) of the mobile stations $\mathbf{M_k}$, the corresponding location information for $\mathbf{M_j}$ corresponds to a wireless coverage extent for the corresponding communication station, wherein the corresponding communication station is in two way wireless communication with $\mathbf{M_j}$.

486. (Currently Amended) The system of Claim 484, wherein the network node activates the destination determination process for outputting, for at least some mobile stations ($\mathbf{M_j}$) of the mobile stations ~~for each~~ $\mathbf{M_n}$, wherein the corresponding location indicative data for $\mathbf{M_j}$ provides data in a common data format which is independent of the corresponding network destination, the common data format having a common predetermined semantics for interpretation thereof, the common data format including at least some of: data representing a location for $\mathbf{M_j}$, data indicative of a confidence in the data representing the location, data indicative of a timestamp, data indicative of a processing performed.

487. (Previously Presented) The mobile location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of some of the plurality of mobile stations, the selection component selectively communicates with the first location providing source, wherein the location information for $\mathbf{M_j}$ is also dependent upon a location of at least one of the communication stations.

488. (Currently Amended) The mobile location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of some of the mobile stations $\mathbf{M_k}$, the selection component ~~process~~ selectively communicates with one of the location providing sources that determines an instance of the location information for $\mathbf{M_j}$ using a locus of locations relative to at least one of the communication stations, wherein for locations identified by said locus of locations, a signal time delay dependent condition is satisfied for a wireless signal communicated between the at least one communication station and $\mathbf{M_j}$.

489. (Currently Amended) The location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of some of the mobile stations $\mathbf{M_k}$, the selection component ~~process~~ selectively communicates with one of the location providing sources that determines an instance of the location information for $\mathbf{M_j}$ by:

(i) obtaining access to a computational machine model that is determined using an association between geographical locations in a wireless coverage area, and signal data obtained from the geographical locations, wherein for each of the geographical locations, **L**, the association associates: (i-1) a representation of **L**, and (i-2) a portion of the signal data for measurements, $\mathbf{m_L}$, of wireless signals communicated between: a mobile station, $\mathbf{M_L}$, approximately at the location **L**, and the communication stations; and

(ii) supplying to the computational machine model data for measurements, $\mathbf{m_j}$, of wireless signals communicated between $\mathbf{M_j}$ and the communication stations;

wherein the instance of the location information for $\mathbf{M_j}$, output by the one location providing source, is dependent upon the computational machine model determining a similarity between the data for the measurements $\mathbf{m_j}$, and the signal data of the association;

wherein the measurements $\mathbf{m_L}$ for at least some of the locations **L** include one of: measurements of a variation in wireless signal strengths within the coverage area, and measurements of a variation in wireless signal time delay within the coverage area.

490. (Currently Amended) The mobile location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of some of the mobile stations $\mathbf{M_k}$, the selection component ~~process~~ selectively communicates with one of the location providing sources that determines the location information for $\mathbf{M_j}$ as an offset of the mobile station $\mathbf{M_j}$ from at least one of the communication stations.

491. (Currently Amended) The mobile location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of some of the plurality of mobile stations, the selection component ~~process~~ selectively communicates with one of the location providing sources that determines an instance of the location information for $\mathbf{M_j}$ using a direction of arrival technique, wherein the technique determines a geographic estimation for a location of $\mathbf{M_j}$, by using a direction from which wireless signals arrive at one of the communication stations from the mobile station $\mathbf{M_j}$.

492. (Currently Amended) The mobile location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of some of the plurality of mobile stations, the selection component ~~process~~ selectively communicates with a second of the location providing sources that determines an instance of the location information for $\mathbf{M_j}$ from a locus computing technique, wherein the technique determines a geographic estimation for $\mathbf{M_j}$ by utilizing timing measurements for determining a locus of locations for $\mathbf{M_j}$;

wherein the timing measurements are a function of a signal time delay between the mobile station $\mathbf{M_j}$, and at least one of the communication stations **CS**.

493. (Currently Amended) The mobile location system of Claim 484, further including a data store for caching a location estimate for the location indicative data of each at least some of the plurality of mobile stations, wherein the data store resides on the network and distinct is from a corresponding one of the mobile stations for which the location estimate was obtained,

wherein for each of the location estimates and a corresponding one of the requests resulting in the location estimate, the location estimate is cached in the data store, and remains in the data store for a subsequent

request ~~the location estimate is used~~ for obtaining another instance of the location indicative data for the corresponding mobile station ~~output be the network node~~.

494. (Previously Presented) The location system of Claim 484, wherein for at least one mobile station ($\mathbf{M_j}$) of the mobile stations $\mathbf{M_n}$, the mobile station $\mathbf{M_j}$ is an instance of the mobile station $\mathbf{M_i}$ and is an instance of the mobile station $\mathbf{M_k}$.

495. (Previously Presented) The location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of at least some of the mobile stations $\mathbf{M_n}$, the network node accesses data indicative of an accuracy of a location estimate provided by an instance of the location information for $\mathbf{M_j}$ received from one of the location providing sources, wherein the data indicative of an accuracy is used for activating one or more processes for obtaining an additional location estimate.

496. (Previously Presented) The location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of at least some of the mobile stations $\mathbf{M_n}$, the network node determines the location indicative data for $\mathbf{M_j}$.

497. (Currently Amended) The mobile location system of Claim 484, wherein for one of the requests for locating one of the plurality of mobile stations ($\mathbf{M_j}$), the network node receives a plurality of instances of the location information for $\mathbf{M_j}$, at least two of the instances obtained using different wireless location techniques ~~technologies~~.

498. (Previously Presented) The location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of at least some of the mobile stations $\mathbf{M_n}$, the location indicative data therefor includes a likelihood that the mobile station $\mathbf{M_j}$ resides in a geographical area represented by the location indicative data therefor.

499. (Currently Amended) The location system of Claim 484, further including a component ($\mathbf{C_f}$) of the computational equipment for one of interpolating and extrapolating a location, for each mobile station of at least some of the mobile stations $\mathbf{M_n}$, from locations $\mathbf{L}$ of other mobile stations.

500. (Currently Amended) The location system of Claim 484, further including a combiner component of the computational equipment for receiving, for each mobile station ($\mathbf{M_j}$) of at least some of the mobile stations $\mathbf{M_n}$, a first instance of the location information for $\mathbf{M_j}$ from the first location providing source, and a second instance of the location information for $\mathbf{M_j}$ from the ~~second~~ one location providing source, and combining the

first and second instances to obtain the location indicative data for $\mathbf{M_j}$, the combining including identifying data indicative of at least one location common to both the first instance and the second instance.

501. (Previously Presented) The location system of Claim 484, wherein for each mobile station ($\mathbf{M_j}$) of at least some of the mobile stations $\mathbf{M_n}$, at least one of an instance of the location information for $\mathbf{M_j}$ and an instance of the location indicative data for $\mathbf{M_j}$ includes information descriptive of location processing performed for locating $\mathbf{M_j}$.

502. (Currently Amended) A mobile station location system for locating each mobile station ($\mathbf{M_0}$) of a plurality of mobile stations (said plurality of mobile stations denoted $\mathbf{\Sigma}$),

wherein the location system provides communications for obtaining information indicative of locations of the mobile stations of $\mathbf{\Sigma}$ by activating one or more of mobile station location estimating sources provided by computational machinery;

wherein for locating each of a plurality of the mobile stations of $\mathbf{\Sigma}$, a first of the one or more estimating resources provides a corresponding [[of]] first location information that is dependent upon a result [[from]] of computational machinery performing an implementation of a location technique included in the category (a) of location techniques following, and for locating each of a plurality of the mobile stations of $\mathbf{\Sigma}$, corresponding second location information is obtained that is dependent upon a result [[from]] of computational machinery performing an implementation ofa location technique of the category (b) of location techniques following:

(a) a first category of one or more signal processing location techniques, wherein each of the signal processing location techniques estimates a location of at least one of the mobile stations ($\mathbf{M_a}$) of $\mathbf{\Sigma}$ by determining location information for $\mathbf{M_a}$ by a conversion of signal timing data to a geographical extent of $\mathbf{M_a}$, wherein the signal timing data includes: for each of a plurality of transmitting stations, located above and not supported on the Earth's surface, an elapsed time of one or more wireless signals transmitted from the transmitting stations, and received by the mobile station $\mathbf{M_a}$;

(b) a second category of one or more location techniques, wherein each of the location techniques of the second category outputs corresponding data for locating of each mobile station ($\mathbf{M_b}$) of a plurality of the mobile stations of $\mathbf{\Sigma}$, the corresponding data dependent upon wireless communication between the mobile station $\mathbf{M_b}$ and at least one of a plurality of terrestrially based stationary communication stations of a wireless network, wherein the corresponding data is obtained using information for identifying a location of one of the terrestrially based stationary location communication stations, **CS**, and

wherein the wireless communication includes a plurality of receptions of wireless signal transmissions communicated between the mobile station $\mathbf{M_b}$ and **CS**, with at least one of the transmissions being received at **CS**;

the location system comprising: equipment for communicating on one or more communications networks, the equipment including:

a location data resource for the communications networks, the location data resource including a network interface, wherein for each of the mobile stations $\mathbf{M_0}$, ~~the location data resource including a~~ the network interface [[that]] provides a location estimate of the mobile station $\mathbf{M_0}$ to a predetermined network destination via one of the communications networks;

wherein the location data resource includes a selection process that performs a selection resulting in preferring an instance ($\mathbf{I_1}$) of the corresponding first location information for $\mathbf{M_0}$ being an instance of $\mathbf{M_a}$, for obtaining the location estimate over an instance ($\mathbf{I_2}$) of the corresponding second location information for $\mathbf{M_0}$ being an instance of $\mathbf{M_b}$.

503. (Currently Amended) The system of Claim 502, wherein the location data resource receives at least one of: $\mathbf{I_1}$ when available, and ~~the location data resource receives~~ $\mathbf{I_2}$ when available.

504. (Currently Amended) The system of Claim 502, wherein for at least one of the mobile stations, $\mathbf{M_1}$, the equipment includes the computational machinery for performing the implementation of the location technique for determining the corresponding second location information for $\mathbf{M_1}$, and the corresponding second location information for $\mathbf{M_1}$ is obtained by identifying or recognizing a similarity between (i) and (ii) following:

(i) at least a portion of signal location characteristic data obtained from each of a plurality of locations in a wireless coverage area corresponding to the plurality of the communication stations, the portion obtained using signal transmissions from a mobile station different from $\mathbf{M_1}$, and

(ii) a corresponding portion of signal location characteristic data of the wireless signal measurements communicated between $\mathbf{M_1}$ and at least one of the communication stations.

505. (Currently Amended) The system of Claim 502, wherein for at least one of the mobile stations, $\mathbf{M_1}$, the equipment includes the computational machinery for performing the implementation of the location technique for determining the corresponding [[the]] second location information for $\mathbf{M_1}$, and the corresponding second location information for $\mathbf{M_1}$ is obtained by utilizing timing measurements of wireless signals between the mobile station $\mathbf{M_1}$ and the plurality of terrestrially based communication stations for determining a geographical range of the mobile station $\mathbf{M_1}$ from one of the terrestrially based communication stations, **CS**;

wherein the timing measurements are used to determine a signal time delay between the mobile station $\mathbf{M_1}$, and **CS**, and

wherein for obtaining the timing measurements, there is a plurality of wireless signal transmissions between the mobile station $\mathbf{M_0}$ and **CS**, with at least one of the transmissions being from the mobile station $\mathbf{M_1}$ to **CS**.

506. (Currently Amended) The system of Claim 502, wherein for at least one of the mobile stations, $\mathbf{M_1}$, the equipment includes the computational machinery for performing the implementation of the location technique for determining the corresponding [[the]] second location information for $\mathbf{M_1}$ at a location L, and the corresponding second location information for $\mathbf{M_1}$ includes ~~information for identifying~~ location data related to a coverage area of at least one of the terrestrially based communication stations, wherein the location data is used as a location estimate of the mobile station $\mathbf{M_0}$ when the first location information is unavailable at the location L.

507. (Previously Presented) The system of Claim 502, wherein for at least one instance of the mobile station $\mathbf{M_0}$, the selection process selects one of: the instance $\mathbf{I_1}$, and the instance $\mathbf{I_2}$ according to a result indicative of wireless signaling or environmental characteristics of a geographical area.

Claim 508 (cancelled).

509. (Previously Presented) The method of Claim 97, wherein the first collection includes a first location estimation for a first location of the mobile station **M** obtained using the first technique, and a second location estimation for a second location of the mobile station **M** using the second technique.

510. (Currently Amended) The method of Claim 97, wherein a location estimate for **M** is obtained that is a result of a comparison, by computational machinery, of at least a portion of at least two of the first, second and third geographic location information ~~obtained from different ones of the first, second and third techniques~~.

511. (New) The method as claimed in Claim 85, wherein, for at least one occurrence of locating one of the mobile stations for being **M**, at least one of said first and second location estimators utilizes a mobile base station estimator for estimating a location of said mobile station **M** from location information received from a mobile base station detecting wireless transmissions of said mobile station **M**.

512. (New) The method as claimed in Claim 85, wherein, for at least one occurrence of locating one of the mobile stations for being **M**, said first location estimator is provided by computational machinery performing a coverage area location technique for estimating a location of said mobile station **M** at a location L, wherein the estimated location is associated with an area of a wireless coverage area for one of said communication stations,

wherein the estimated location is included in the resulting location estimate of the mobile station **M** when the first location related information is unavailable or unsatisfactory for the location L.

513. (New) The method of Claim 85, wherein, for at least one occurrence of locating one of the mobile stations for being **M**, at least one of the first and second location estimators performs a technique for determining, for at least one of the communication stations, **CS**, an angular orientation about the communication station **CS** of a direction of the mobile station **M** determined using a measurement of a wireless signal direction of arrival of wireless signals transmitted between the mobile station **M** and the communication station **CS**;

wherein said at least one communication station **CS** is stationary.

514. (New) The method of Claim 85, further including a step of providing information for activating at least one the first and second location estimators, wherein said information for activating is output by a common activation requesting component.

515. (New) The method of Claim 85, further including, for at least one occurrence of locating one of the mobile stations for being **M**, a step of obtaining one or more: (i) data indicative of an error for a geographical extent for locating the mobile station **M**, (ii) data indicative of an accuracy in a geographical extent for locating the mobile station **M**, and (iii) data indicative of a likelihood of the mobile station **M** being in a geographical extent for locating the mobile station **M**.

516. (New) The method of Claim 515, wherein the at least one occurrence includes a plurality of occurrences of locating a plurality of the mobile stations for being **M**, wherein for each of the plurality of occurrences, a corresponding instance of the resulting location estimate includes the data indicative of the likelihood of the mobile station **M** being in the corresponding geographical extent for locating the mobile station **M**.

517. (New) The method of Claim 85, wherein, wherein for at least one occurrence of locating one of the mobile stations for being **M**, the first geographical indication is not obtained, or is determined to not be effective for use in determining the corresponding instance of the resulting location estimate.

518. (New) The method of Claim 515, wherein the at least one occurrence includes a plurality of occurrences of locating a plurality of the mobile stations for being **M**, wherein for each of the plurality of occurrences, a corresponding instance of the resulting location estimate includes the data indicative of the error or accuracy for the corresponding geographical extent for locating the mobile station **M**.

519. (New) The method of Claim 85, wherein, for the occurrence of locating the one mobile station, the second geographical indication determines the spatial range for the one mobile station, wherein the spatial range is enhanced by communication between the one mobile station and at least one of the terrestrial communication stations.

520. (New) The method of Claim 251, wherein the location related component is activated for the occurrence of locating the some one mobile station, and for the another occurrence of locating the one mobile station.

521. (New) The method of Claim 97, wherein for determining a location L of an instance, $\mathbf{M_1}$, of the mobile station **M**, the preference for determining the resulting information includes determining the resulting information without one of: (i) using corresponding instances of the second and third geographical location information for the location L, and (ii) obtaining corresponding instances of the second and third geographical location information for the location L;

wherein for determining a location L_2 of an instance, $\mathbf{M_2}$, of the mobile station **M**, the resulting information is determined using one of using a corresponding instance of one of the second and third geographical location information for the location L_2.

522. (New) The method of Claim 119, wherein for determining a location L of an instance, **M**, of the mobile station $\mathbf{M_1}$, the substep (B3) of selecting for determining the resulting location estimate is performed and includes determining the resulting location estimate by discarding or filtering one of the first information for the location L;

wherein for determining a location L_2 of an instance, $\mathbf{M_2}$, of the mobile station $\mathbf{M_1}$, the substep (B3) of selecting for determining the resulting location estimate is performed and includes determining the resulting location estimate by discarding or filtering one of the second information for the location L.

REMARKS

Applicants have added further limitations to substantially all independent claims (and many of the dependent claims) for identifying various processes as being performed by "computational equipment" and/or "computational machinery". It is believed that such amendments are consistent with both Office guidelines and court rulings. It is intended that the terms "computational equipment" and "computational machinery" added to the claims refer to (or include) one or more particularly configured computational machines such as: one or more particularly programmed computers, and/or one or more hardware devices having access to instructions (e.g., via software, firmware, or otherwise) for performing the functions and algorithms disclosed in the claims and the specification. It is further believed that such further limitations add no new questions of patentability to the pending claims in that: (i) one of ordinary skill in the art would readily understand that these new claim limitations are clearly performed by computational machines, and (ii) the specification and the figures of the present application disclose various computational machines (and operative combinations of such machines), including, e.g., a location center 142 and components thereof (e.g., as shown in Fig. 8), the wireless location computational components of a mobile base station 148 (e.g., as shown in Fig. 11 and disclosed in Appendix A), and various wireless location estimators such as the "first order models" 140, and the baseline location estimators 1540.

Additional amendments to the independent claims are also described as immediately follows. All amendments to the independent claims are believed to not affect the patentability of these claims. Most limitations are to provide consistency in claim terms, enhance readability, and correct minor errors. There are a few independent claims whose scope has been minorly changed, but such changes are believed to be well within the scope of patentable subject matter herein. Accordingly, it is respectfully submitted that the amended independent claims herein remain patentable, and do not require further examination by the Examiner.

Additional Amendments to Independent Claims.

Additional amendments to the independent claims are described as follows.

Claim 85.

Regarding the additional amendments to Claim 85, these amendments add limitations that are believed to clarify the claim. That is, it is believed that the scope of the claim has not been broadened. However, if in some manner this claim has been broadened, such broadening is believed to be well within the scope of patentable subject matter.

Claim 97.

Regarding Claim 97, the additional amendments to the present claim are as follows:

- There has been a notational change from $\mathbf{M}_2$ to $\mathbf{M}_{\mathbf{L}_a}$, and from $\mathbf{M}_3$ to $\mathbf{M}_{\mathbf{S}}$. Such a change adds no new matter to the claim.
- Various instances of the term "geographical location information" are now identified by the prefix "first", "second" and "third" for clarity, and to clarify the instance of "geographical location information" in the "obtaining" step (2). This is believed this change adds no new scope

to the claim in that the "obtaining" step of the present claim prior to amendment recited that such "geographic location information is obtained from "one or more location evaluators". Additionally, the amendment to the "obtaining" step (2) now assists in the clarification of at least the subclaim 188.

Further, the daggling "of" at the end of the "transmitting" step (3) has been deleted. All other changes are also clarifications that are not believed to change the scope of the claim.

Claim 99.

Regarding independent Claim 99, the additional amendments to the present claim include various notational changes such as:

- "first data" is now --geographical location information--,
- "second data" is now –second geographical information--.

All additional amendments are believed to further clarify the claim, e.g.,

- The "first obtaining" step now recites that "said first technique" is "performed by a corresponding one of the location determining sources", and
- The "second obtaining" step now recites that "the second technique" is "performed by a corresponding one of the location determining sources".

Claim 106.

The present independent claim has been additionally amended such that:

- The "archive" element is now a – data storage archive--.
- The "interface for communication with one or more location estimators" element is now a -- computational component having at least one module of machine instructions for communicating with computational equipment providing one or more location estimators --. It is believed that this change in notation does not affect the patentability of the claim; and
- Correction for the recitation of "M" in the last "wherein" clause of the claim since "M" was not previously described in the present claim.

Claim 113.

The additional amendment to the present independent claim is for limiting the claim element "transport" to a – vehicular transport – such as a car, truck, van, or other wheeled platform.

Claim 118.

The additional amendments to the present independent claim are syntax adjustments.

Claim 119.

The additional amendments to the present independent claim are syntax adjustments.

Claim 121.

The additional amendments to the present independent claim are syntax adjustments.

Claim 126.

The additional amendments to the present independent claim provide the following changes:

- In the preamble the phrase has been amended as follows: "a wireless mobile station ~~using~~ dependent upon measurements of wireless signals".
- The two recitations of "predetermined corresponding location technique" in the first and second "wherein" clauses of the claim now have their output distinguished respectively as – first location information" and "second location information".

Claim 137.

There are no additional amendments to the present claim other than those described above regarding the insertion of text regarding "computational equipment" and/or "computational machinery".

Claim 140.

The additional amendments to the present independent claim provide the following changes:

- In the preamble the phrase has been amended as follows: "a mobile station ~~using~~ dependent upon measurements of wireless signals".
- The "first technique" has been changed to the – first location technique --, the "second technique" has been changed to the – second location technique, and the "different technique" has been changed to the – different location technique --.
- In clause (a), "transceivers" is now – terrestrial transceivers" to correspond with the "terrestrial transceivers" in the preamble; however, there is no other types of "transceivers" recited in this claim.
- In clause (b), the term "second input including" is now – second input further including --.

Claim 142.

There are no additional amendments to the present claim other than those described above regarding the insertion of text regarding "computational equipment" and "computational machinery".

Claim 159.

There are no additional amendments to the present claim other than those described above regarding the insertion of text regarding "computational equipment" and/or "computational machinery".

Claim 179.

There are no additional amendments to the present claim other than those described above regarding the insertion of text regarding "computational equipment" and/or "computational machinery".

Claim 350.

The additional amendments to the present independent claim provide the following changes:

- Minor corrections such as the following:
  1. "perform steps (A) through ([[F]] E)",
  2. "the second location technique is not used for determining the location estimate", and
  3. "first location technique is not used for determining a resulting location estimate from the second location technique".

Claim 412.

The additional amendments to the present independent claim provide the following changes:

"performing after receipt by [[at]] the node of ~~, for each~~ the instance[[s]] $\mathbf{I_1}$ and after receipt by the node of the instance $\mathbf{I_2}$, at least one corresponding computation, by computational machinery, that is dependent on a geographical location of a corresponding one of the first and second mobile stations;"

It is believed that this amendment does not affect the patentability of the present claim.

Claim 454.

The additional amendments to the present independent claim are syntax adjustments.

Claim 461.

The additional amendments to the present independent claim are syntax adjustments.

Claim 468.

The additional amendments to the present independent claim are syntax adjustments.

Claim 484.

The additional amendments to the present independent claim provide the following changes:

- Since the present claim is an apparatus claim, it is believed more appropriate to change the "selection process" into a – selection component --, and change the "destination determination process" into a – destination determination component --. Accordingly, these amendments are provided in the present claim.
- The term "predetermined interface" in paragraphs (1) and (a-1) have been changed to – network node –wherein "network node" is the first claimed element in the present claim. It is believed that these changes do not affect the patentability of the present claim.
- The replacement of "by" with – using – in paragraph (a-1) is believed to not affect the patentability of the present claim.
- The amendment in paragraph (b-1), the text: "provided by one of the location providing sources" is inserted, is a narrowing of the claim.
- The amendment to the "wherein" clause now labeled "(C)" is also believed to not affect the patentability of the present claim. This clause is provided here for the Examiner's convenience:

"(C) wherein for at least one mobile station ($\mathbf{M_p}$) of the mobile stations $\mathbf{M_k}$ and the corresponding location for $\mathbf{M_p}$ according to (B) above, the location indicative data for $\mathbf{M_p}$ ~~therefor~~ is not obtained using geographic data indicative of a spatial range between the mobile station $\mathbf{M_p}$ and one or more transmitting stations above and not supported on the Earth's surface, wherein the geographic data would have to be determined using signals received at the mobile station $\mathbf{M_p}$ from the one or more transmitting stations;"

The amendments here are believed to be more indicative of the corresponding embodiments in the specification corresponding to the present claim.

- All additional amendments are believed to be syntax adjustments and/or insertion of text to assist in readability.

Claim 502.

The additional amendments to the present independent claim provide the following changes:

- The claim now recites that the elements of the claimed "mobile station location system" includes "equipment for communicating on one or more communications networks, the equipment including: …". It is believed that this additional constraint certainly does not increase the scope of the present claim, and accordingly does not affect the patentability of the present claim.
- The claim paragraph reciting the "location data resource" element of the present claim has its description rearranged. In particular, the phrase "the location data resource including a network interface" has been moved. For the Examiner's convenience, the amended claim paragraph is provided here:

  "a location data resource for the communications network, the location data resource including a network interface, wherein for each of the mobile stations $\mathbf{M_0}$, ~~the location data resource including a~~ the network interface [[that]] provides a location estimate of the mobile station $\mathbf{M_0}$ to a predetermined network destination via the communications network;"

  It is believed that such rearrangement (and the addition of limitations related to the "communications network") does not affect the patentability of the present claim.
- All additional amendments are believed to be syntax adjustments to correct grammatical issues.

Amendments to the Dependent Claims.

Since the independent claims of the present application are patentable, it is believed that all subclaims are also patentable. However, in order to assist the Examiner at some of the amendments to the dependent claims are discussed here.

Regarding Claim 187, the amendment thereto is fully supported by the following specification passages:

- In the description of the "Most Likelihood Estimator Embodiment", there is the following description:

  'Additionally, in some embodiments, the most likelihood estimator 1344, upon receiving one or more location hypotheses from the hypothesis analyzer 1332, also performs some or all of the following tasks:

  (37.1) ***Filters out location hypotheses having confidence values near zero whenever such location hypotheses are deemed too unreliable to be utilized*** in determining a target MS location estimate. For example, location hypotheses having confidence values in the range [-0.02, 0.02] may be filtered here;'

- In the "Mobile Base Station Controller Program" of Appendix A, the following passage is provided:

  'MS_new_est <--- *get_Location_Center_MS_est*(event);

  /* This information includes error or ***reliability estimates*** that may be used in subsequent attempts to determine an MS location estimate when there is no communication with the LC and no exact (**GPS**) location can be obtained. That is, if the reliability of the target MS's location is deemed highly reliable, then subsequent ***less reliable location estimates should be used only to the degree that more highly reliable estimates become less relevant*** due to the MS moving to other locations. */'

- The "FILTER" function described in Appendix A of the specification. In particular, this function is described as follows:

  '/* This function determines whether "MBS_new_est" is of sufficient ***quality*** to insert into it's corresponding MBS location track. It is assumed that the location track of "MBS_new_est.type" is non-empty.

  Input: MBS_new_est A new MBS location estimate to use in determining the location of the MBS.

  Returns: FALSE if "MBS_new_est" was processed here (i.e., filtered out), TRUE if processing with "MBS_new_est" may be continued . */

  ...

  /* **see if "MBS_new_est" can be filtered out.** */

  if (the ***confidence*** in MBS_new_est < a predetermined function of the confidence(s) of previous MBS location estimates of type "MBS_new_est.type")

  /* e.g., the predetermined function here could be any of a number of functions that provide a minimum threshold on what constitutes an acceptable confidence value for continued processing of "MBS_new_est". The following is an example of one such predetermined function: K*(confidence of "MBS_new_est.type" location track head) for some K, 0<K<= 1.0, wherein K varies with a relative frequency of estimates of type "MBS_new_est.type" not filtered; e.g.., for a given window of previous MBS location estimates of this type, K= (number of MBS location estimates of "MBS_new_est.type" not filtered)/(the total number of estimates of this type in the window). Note, such filtering here may be important for known areas where, for example, **GPS** signals may be potentially reflected from an object (i.e., multipath), or, the Location Center provides an MBS location estimate of very low confidence. **For**

simplicity, the embodiment here discards any filtered location estimates. However, in an alternative embodiment, any such discarded location estimates may be stored separately so that, for example, if no additional better MBS location estimates are received, then the filtered or discarded location estimates may be reexamined for possible use in providing a better subsequent MBS location estimate.*/

then continue_to_process_new_est <-- FALSE;'

New Subclaims.

New dependent Claims 511 through 522 have been added. It is believed these claims are patentable at least due to their dependence on a patentable independent claim.

Since all claims are believed to be in condition for allowance, it is requested that the Examiner reconsider the present application, and allow it to proceed to issuance. If the Examiner has any questions, it is requested that the Examiner contact the undersigned as soon as possible.

Accordingly, since all claims are believed to be in condition for allowance, it is requested that the present application be reconsidered. It is believed that no fees are due with the current After Allowance Amendment as discussed in the initial statements of this correspondence. If any other fees are due, the undersigned Applicant requests a phone call at 303-863-2975.

Respectfully submitted,

Date: March 15, 2010

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